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BIRDS OF THE HUACHUCA MOUNTAINS,
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...BY...

HARRY S. SWARTH



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BIRDS OF THE HUACHUCA MOUNTAINS, ARIZONA.

BY HARRY S. SWARTH.

INTRODUCTION.

The Huachuca Mountains are a range which have been pretty thoroughly explored by investigators in various branches of natural history, but of which there has been but little published, at least of ornithological interest. A few scattered notes recording the occurrence of various rarities in that region, and some more or less carefully detailed accounts of the breeding habits of the most interesting and conspicuous species of birds inhabiting the mountains are about all that have appeared, but nothing of a general character; and as in the course of several seasons careful work in the mountains many interesting and surprising facts in distribution, migrations, etc., of various species were being continually encountered, which, while they may be familiar to the naturalists who have visited the range, are probably unknown to ornithologists in general, I have been induced to embody the results of my labors in the following pages. The list of residents and summer visitants I believe to be fairly complete, but as stray individuals of many surprising and more or less unexpected species have turned up in the region on various occasions it is but fair to suppose that additional species of this class will have to be added to this list in the future, and it is possible that there are some that I failed to meet with occurring regularly during the fall migration, of which I saw but very little. Though considerable work was done along the valley of the San Pedro River, but a few miles distant, and a number of birds found there not occurring in the Huachucas, I have preferred to limit my list to such species as occur in the mountains, or, ranging over the plains below, occasionally venture up into the mouths of the canyons; for a great variety of migrating water fowl undoubtedly occurs along the San Pedro River, both in the spring and fall, and these I had hardly any opportunity of observing, so prefer to restrict myself as indicated.

The following list is, with the exception of a few records quoted from various publications, entirely from observations made and specimens collected during three visits to the region under consideration. In 1896 four of us, W. B. Judson, H. G. Rising, O. W. Howard and myself made the Huachuca mountains the objective point of a leisurely wagon trip from Los Angeles across the Colorado desert and southern Arizona, and spent three months, from April 25th to July 20th, camped in Ramsey Canyon. In 1902 O. W. Howard and myself were camped together near the mouth of Miller Canyon from March 29th to July 25th, when Mr Howard returned to Los Angeles, leaving me in the mountains, where I remained until September 5th. In 1903 I was in the mountains, also in Miller Canyon, from February 17th to May 30th. Almost all the collecting was done on the east side of the mountains, in the seven canyons

from Tanner to Ash Canyon, by far the best part of the range, ornithologically considered. Occasional trips were made to the west slope of the mountains, and along the San Pedro River. In 1896 but comparatively few skins were put up, but a large collection of nests and eggs was gathered which is unfortunately inaccessible at the present writing. On the two subsequent trips more attention was paid to the collecting of the birds themselves; personally I put up some 2500 skins, which, with the notes made at the same time, form the basis of the present paper.

The Huachuca Mountains lie in the southeastern corner of Arizona, extending northwest and southeast, and with their southern extremity lying just over the Mexican boundary line. The range is a small one, about forty miles long, composed of a single ridge or back bone, which reaches its greatest height at about the middle of the range; where two peaks rise, one to an altitude of about 10,000 feet, and the other a few hundred feet lower. On the eastern slope a number of broad, well watered canyons extend from the plains quite to the divide of the range, while smaller and shorter ones lie between. The western slope is steeper and more rugged, and the canyons are consequently shorter and not so well watered. The base of the mountains at Miller Canyon, about the center of the range lies at an altitude of about 4500 feet, and in this same canyon, where I did most of my collecting, the distance from the mouth of the canyon to the divide (9000 feet) is about six miles.

The San Pedro River rises west of the Huachucas, circles about the southern extremity of the range, and flows in a northerly direction almost parallel with the mountains and at an average distance of about fifteen miles. Just north of the mountains the Barbocomari River flows, about at right angles with the line of the range, emptying into the San Pedro River at Fairbanks. From the San Pedro to the mountains is an unbroken plain, covered with mesquite and other brush from the river up to within about five miles of the mountains, but for the rest simply a grass covered prairie. Where the various canyons leave the mountains they extend in the shape of washes across the plains to the river, the trees gradually diminishing in size and numbers; and the water sinking, in the summer far above the mouths of the canyons, and in the early spring sometimes two or three miles below, to rise again just before the river is reached. Where the water comes to the surface again rows of large willows, and other vegetation is found.

The Huachucas are a well wooded range, covered in the higher parts, with various conifers; along the canyons with maples, alders, ash, madrones, walnuts and sycamores; with extensive groves of live-oaks over the foothills and along the base of the mountains; and in places thickly covered with low brush. There are very few willows in the mountains, and these but small bushes; and of cottonwoods there are but a very few trees scattered along the base of the range. Though some beautiful little species of cactus occur, the various species of prickly pear and cholla, so conspicuous about Tucson and many other parts of the territory, are almost entirely absent, both in the mountains and in the plains; but there are many mescals all over the range, and, in the foothills a few yuccas.

The winters are cold in the mountains; in February, 1903, there was snow lying over the range down to the foothills, and in places along the

divide it was nearly eight feet deep; while on the first of May there were sheltered spots near the summit of the range where the snow was still lying. Many times in February and March the thermometer fell as low as 20 degrees Fahr. in the night, occasionally as low as 15 degrees. I did not find the summers unpleasantly hot in the mountains, but on the plains below it became far too warm for comfort.

I would like here to express my gratitude, first to Mr. G. Freaan Morcom, in whose interests these trips were made, and who has assisted me in many ways in compiling and publishing this list; to Mr. Joseph Grinnell, whose opinions I have consulted, and of whose advice I have frequently availed myself; and also to Mr. Ridgway who has kindly indentified for me many of the more obscure and puzzling species.

HARRY S. SWARTH.

Los Angeles, California, December 1, 1903.

BIRDS OF THE HUACHUCA MOUNTAINS, ARIZONA.

Oxyechus vociferus (Linnaeus). Killdeer.

Throughout the spring of 1903, when water was abundant in the mountains, and there were running streams in most of the washes below, several pair of Killdeer were seen along the streams near the base of the range. They could always be found in about the same locality, and presumably bred there. Along the San Pedro River they are quite common, but this is the only year in which I have seen them near the mountains.

Callipepla squamata (Vigors). Scaled Partridge.

Owing to the lack of cover near the base of the Huachucas, the Scaled Quail is but seldom seen there; though it is a common resident along the San Pedro River and up to within five or six miles of the mountains; as far, in fact, as the brush extends. I have seen a few birds near the mouths of various canyons, usually in enclosed pastures, where the grass and other vegetation attained a higher growth than elsewhere; and very probably a few pair breed in such localities.

Cyrtonyx montezumae mearnsi Nelson. Mearns Partridge.

This species seems to be scattered irregularly over the entire range, though much more abundant on the western than on the eastern slope; and apparently varies greatly in numbers in different years. In the summer of 1896, with four of us scouring the mountains daily, but two pairs of birds were seen, though two years later, in 1898, Mr. O. W. Howard found them to be most abundant in the same region. In 1902, in spite of all our efforts, Mr. Howard and I were unable to find a single bird, and in the following year, 1903, though informed of their occurrence in various places by inhabitants of the mountains, I saw just three myself. Owing to the peculiar habits and secretiveness of the species, together with the rough, broken nature of the ground in which it is found, it is quite possible for it to be fairly abundant, and still be entirely overlooked. If there are any of the quail around, indications of their presence can usually be found, in the shape of small, shallow depressions in the grass or dead leaves, where they have been scratching or dusting, of which they seem to do a great deal. As far as I could make out they seemed to occur indiscriminately from the base of the mountains to the top of the highest peaks.

Meleagris gallopavo merriami Nelson. Merriam Turkey.

I was told that the wild turkeys were formerly quite abundant in the Huachucas, but at present they are rare, though apparently distributed throughout the range. Mr. O. W. Howard has given an account of the capture of a set of eggs of this species in this region (Condor II, 1900, page 55) and besides the bird he mentions, I have heard of possibly half a dozen more, seen in the last three or four years, but never met with any myself.

Columba fasciata Say. Band-tailed Pigeon.

As soon as the acorns begin to ripen the Band-tailed Pigeons put in their appearance in numbers corresponding with the size of the crop; and throughout the summer they are abundant in all parts of the mountains. The earliest date of arrival noted was March 31, 1902, when three birds were seen, but this is exceptionally early, and they do not arrive in any numbers before May 1, as a rule. They breed rather late and I

have seen several nests containing young but a few days old the first week in September. Large flocks may be seen all through the summer, feeding in the oak trees in the lower parts of the mountains, but as a rule, they seem to breed at rather high altitudes, for most of the nests I have seen have been above 8000 feet. I know of no instance in which more than one egg or one young bird has been found in a nest in this region. During the breeding season the male bird is fond of sitting in some elevated position, usually the top of a tall dead pine, giving utterance, at frequent intervals, to a loud "coo," more like the note of an owl than a pigeon, which can be heard at a considerable distance; while occasionally he launches himself into the air, and with wings and tail stiffly outspread, describes a large circle back to his starting point, uttering meanwhile a peculiar, wheezing noise impossible of description. I had supposed that this noise was made by the outspread wings, but a male bird which Mr. Howard had in his possession for some time, gave utterance to the same sound whenever angered or excited, evidently by means of his vocal organs, as we had ample opportunity of observing.

Zenaidura macroura (Linnaeus). Mourning Dove.

A common summer resident, at times appearing in incredibly large numbers, as in April, 1902, when they were particularly abundant. They fed out on the plains below the mountains, and as it was a very dry year, were obliged to fly a mile or two up the canyons for water. Morning and evening they passed over our camp on their way up the canyon, the flight lasting from half to three-quarters of an hour during which time there was an almost continuous stream of birds passing overhead. During this time they formed no inconsiderable part of our daily bill of fare, being almost the only thing in the way of small game that the mountains afforded. Although usually found low down in the canyons, I have occasionally seen Mourning Doves as high as 9000 feet.

Melopelia leucoptera (Linnaeus). White-winged Dove.

In the spring the White-winged Doves make their appearance in the lower parts of the mountains in small numbers, and usually in company with the Mourning Doves. In 1902, the first one seen was on April 30 and the last May 15th. In the fall of the same year one was taken on August 6; and from then on until I left, September 5, they were much more abundant than I have ever seen them in the spring. Most of the fall birds were young of the year; as a rule they were two together, sometimes pairs and sometimes two of the same sex, though occasionally as many as six or eight were seen together. The White-winged Dove breeds rather commonly in places along the San Pedro River some twenty miles distant, but I know of no instance of its breeding in the Huachucas. The highest altitude at which I have seen it in the mountains is 5000 feet, and at that height but rarely.

Columbigallina passerina pallescens (Baird). Mexican Ground Dove.

A rare migrant. I secured a male bird on May 8, 1903, the only one I have seen in the mountains. They breed along the San Pedro River, and though by no means common, a pair or two can usually be found in any suitable locality, showing a marked preference for the cultivated fields and damp pastures.

Cathartes aura (Linnaeus). Turkey Vulture.

Fairly common through the summer months. Mr. F. C. Willard secured a set of eggs in Ramsey Canyon, but they don't seem to breed

in the mountains in any numbers. I think that I have seen more in August than at any other time, but they are never very abundant unless there is some carrion around on which they have been feeding.

Circus hudsonius (Linnaeus). Marsh Hawk.

Quite common in the early spring on the grass covered plains below the mountains, occasionally venturing up into the foot hills. None were seen later than April 1.

Accipiter velox rufilatus Ridgway. Western Sharp-shinned Hawk.

A fairly common migrant, and as I have seen one or two at various times through the summer months I presume that a few remain to breed. They range over all parts of the mountains, from the foothills to the summit of the highest peaks.

Accipiter cooperi (Bonaparte). Cooper Hawk.

Probably a resident, and fairly common though extremely wary; for continual warfare is waged between them and every poultry owner in the mountains. There are one or two pair breeding in almost every canyon, and as, when other game runs short, they make no scruples of picking up a half grown chicken from under its owner's nose, it is only by eternal vigilance that they are enabled to continue their career. I think that this is the only species of hawk occurring in the mountains that makes any deprivations whatever upon the chicken yard.

Accipiter atricapillus (Wilson). American Goshawk.

On two occasions in April, 1903, I saw what I took to be a Goshawk circling overhead at the top of the mountains. I have also seen in the possession of one of the inhabitants of the mountains, a pair of wings undoubtedly belonging to an individual of this species, which he had shot.

Buteo borealis calurus (Cassin). Western Red-tailed Hawk.

Though not at all abundant a few pair breed in the higher parts of the mountains, and the same birds can be seen day after day in about the same locality. In 1902 a pair raised a brood near the head of the Miller Canyon, and through the month of August I frequently saw the young birds in the same locality. They were very tame and unsuspecting, and on several occasions one lit on a tree under which I was resting, evidently out of sheer curiosity.

Buteo abbreviatus Cabanis. Zone-tailed Hawk.

Not at all common. A pair were seen throughout the spring and summer of 1902, but I doubt very much if they bred, as the two were continually seen together up to September, when I left. A single bird was several times seen in the same canyon during the spring of 1903, and I have seen possibly half a dozen more in different parts of the mountains.

Buteo swainsoni Bonaparte. Swainson Hawk.

A very abundant summer resident on the plains between the Huachuca and the San Pedro River. Occasionally a bird ventures up into the canyons, but I have never found any breeding in the mountains proper. In the washes, half a mile or so below the mouths of the canyons, where the trees begin to thin out and the country to become more open, they nest commonly in the walnuts, sycamores and mesquites, the nests being seldom over thirty feet from the ground and

usually much below that. The Swainson Hawks arrive early in April, the first observed in 1903 being on April 3, and they soon become quite abundant. They are very uniform in coloration, being practically all in the light phase of plumage. The only exceptions to this that I have seen, at least of breeding birds, were a female from which I secured a set of eggs on June 4, 1902, which had a great deal of dark chestnut markings on the lower parts, abdomen and thighs; and a female from which I secured a set, below the Santa Rita Mountains, some forty miles northwest of the Huachucas; which last appeared to be nearly black, being fully as dark as any Southern California *swainsoni* that I have seen. On September 5, 1902, while driving from the mountains to the train, enormous flocks of Swainson Hawks were seen between Fort Huachuca and the railroad, hundreds being in sight at once. Many were circling overhead at an average height of about fifty yards, and as many more were lit on the prairie on all sides, feeding on the grasshoppers, which abound there. The grass was so high as to hide many of them, but in several places along the road I counted a dozen or more in a space ten feet square. The great majority of them were in the light phase of plumage, but I saw two or three which appeared nearly black, and about every possible phase of plumage between the two extremes. The flocks were slowly moving in a southerly direction, and, as far as I could make out, contained no species of hawk but *swainsoni*. Of the few specimens of the Swainson Hawk which I prepared, the stomachs contained nothing but grasshoppers, which are so extremely abundant on the grassy plains of this region that I doubt if these hawks eat much of anything else while staying here.

Aquila chrysaetos (Linnaeus). Golden Eagle.

Resident throughout the year but not in any great numbers. Along the divide of the mountains, where they undoubtedly breed, a pair or two can be seen at almost any time, and occasionally a bird is seen on the plains below, hunting jack-rabbits or prairie dogs. During August, 1902, I several times saw what appeared to be young of the year.

Falco mexicanus Schlegel. Prairie Falcon.

In my experience the Prairie Falcon is of quite rare occurrence in this region. Mr. O. W. Howard secured a set of eggs of this species in the Huachuca Mountains (see Condor Vol. IV, 1902, page 57) and probably a few other pairs breed in scattered localities throughout the range, but taking it altogether, I doubt if I have seen over half a dozen of the birds. On April 6, 1902, Mr. Howard and I watched a pair flying about a rocky cliff in Ramsey Canyon. They were apparently in search of a nesting site for they flew into quite a number of caves and crevices in the rock, screaming shrilly the while, but on a later visit to the place we failed to find them.

Falco peregrinus anatum (Bonaparte). Duck Hawk.

A rare migrant. On April 20, 1902, a fine old female was secured at the base of the mountains, the only one I have seen in this locality; though several others were observed at various times along the San Pedro River, where the migrating water fowl probably afford a more congenial field of operations. The one secured had been preying on the Mourning Doves which abounded in the vicinity at the time.

Falco columbarius Linnaeus. Pigeon Hawk.

Of very rare occurrence. A single bird which passed over me on February 23, 1903, is the only one I have ever seen in the Huachucas.

Falco fusco-coerulescens Vieillot. Aplomado Falcon.

In Bendire's "Life Histories" there appears a detailed account of the nesting of this species on the plains below Fort Huachuca. Although evidently of quite common occurrence in this region at the time the data for the article mentioned was gathered, in 1887, since then they seem to have left the country altogether. Time and again I have driven over these plains without ever seeing a single bird which I could ascribe to this species, nor do I know of any being seen or taken in this region within the last few years. What could have caused them to shift their location so absolutely it is hard to surmise.

Falco sparverius phaloena (Lesson). Desert Sparrow Hawk.

During the migrations the Sparrow Hawks are most abundant on the plains, where the swarms of grasshoppers afford them an abundance of food. They breed in the oak regions of the foothills, and also in the pines on the summit, but in the canyons they are seldom seen; seeming to prefer the more open prairies and the uninterrupted view from the mountain tops, to the narrower, more restricted canyons. With a mild winter I suppose they might remain the year through, but in 1903 the weather was cold and there was lots of snow on the ground; and I saw no Sparrow Hawks until the middle of March. From this time until the middle of April they were very abundant, by which time the migrating birds had passed on. In 1902 the southerly movement was begun about the first of August, when the young birds began to make their appearance in large numbers. From this time until I left, September 5, they were exceedingly abundant everywhere on the plains and foothills.

Syrnium occidentale Xantus. Spotted Owl.

The Spotted Owl is resident in the Huachucas, above 6500 feet, particularly favoring the extensive, dark thickets of quaking asp found in the higher parts of the mountains, but occurring also in suitable localities along the canyons, usually not far from water. There are probably at least a pair or two in every canyon, and their varied and uncanny hooting is often heard in the most unexpected of places, occasionally in broad daylight.

Megascops asio cineraceus Ridgway. Mexican Screech Owl.

The common Screech Owl of this region. Probably resident, for I have heard them hooting in February, they are most abundant in the oak region of the lower parts of the mountains; and I do not recall ever seeing one above 6500 feet, though they may occur at a higher elevation. Compared with specimens of *cineraceus* taken at Tucson, the Huachuca Mountains birds are appreciably darker, both above and beneath; the ground color being dark slaty gray, quite different from the pale ashy of the bird of the lowlands.

Megascops trichopsis (Wagler). Spotted Screech Owl.

Though it is hard to estimate the relative abundance of secretive, nocturnal birds like the Screech Owl, this species does not appear to be nearly as common in the Huachucas as *cineraceus* is, and from my experience it would seem to be of quite rare occurrence. I have seen just two specimens taken in the Huachucas; one a male, taken by W. B. Judson, May 28, 1896, at about 6000 feet, altitude; and the second, also a male, taken by H. Kimball, September 29, 1895, and now in my collection.

Megascops flammeolus (Kaup). Flammulated Screech Owl.

Although the Flammulated Screech Owl is quite a common migrant in the Huachucas some years, I believe that but very few remain to breed, the bulk of them going farther north. In 1896 eight, and in 1902 seven, specimens were secured; and of these, I believe all but one were migrating birds. The exception was a female, taken, with a set of two badly incubated eggs, by H. G. Rising on June 7, 1896. Of the others the earliest secured was on April 22, 1902, and the latest on May 12 of the same year. All were shot where they were sitting in the trees, usually in dense thickets almost impossible to penetrate; and this fact may perhaps account for so few specimens of this bird being taken, as quite half of those secured were found while searching for the nest of such birds as bred in the thick brush. On May 5, 1902, O. W. Howard secured two females in some willows on the San Pedro River, fifteen miles from the mountains and an exceptionally low altitude for this species, about 3000 feet. The breeding bird mentioned was taken at about 8000 feet elevation; and all the others, from the base of the mountain (about 4500 feet) up to 6000 feet. In 1903 I did not see a single Flammulated Screech Owl, and it is noteworthy that *cineraceus* was also much more scarce than it had been during the previous year. The stomachs of such as I examined contained nothing but beetles and other insects, indicating an entirely insectivorous diet on the part of this species.

Bubo virginianus pallescens Stone. Western Horned Owl.

I have seen but very few Horned Owls in the Huachucas, although along the San Pedro River it appears to be of fairly common occurrence. In 1896 one made his home in a cavity in the face of a high precipice overlooking our camp, and hardly a night passed that we did not see him appear about dusk, and after a few preliminary hoots, start out in search of provender. A male I secured on May 6, 1903, at the mouth of Miller Canyon, was evidently not breeding. I have heard one or two others hooting at various times, but these two are all that I have seen and I believe that they are anything but common in the mountains. The male bird mentioned above is exceedingly pale in coloration, more so than any other Southern Arizona specimen I have seen, though the plumage is fresh and unworn and does not appear to be faded by the action of the sun. The general appearance of the upper parts is dark gray, with the head and ear tufts rather darker, but with very little of brownish or rusty markings anywhere. The throat, median line of breast, abdomen, tibiae and feet are pure white, while the sides of the body are white, finely marked with narrow, dark vermiculations.

Speotyto cunicularia hypogaea (Bonaparte). Burrowing Owl.

Burrowing Owls are to be seen in considerable numbers in the various prairie dog "towns" between the Huachucas and the San Pedro River, and a few are scattered elsewhere over the prairies, some coming quite to the base of the mountains.

Glaucidium gnoma Wagler. Pygmy Owl.

I have seen but very few Pygmy Owls in the mountains, and though very possibly resident there, I doubt if they are very abundant. On August 3, 1902, I saw a pair of very ragged birds but was unable to secure either of them.

Crotophaga sulcirostris Swainson. Groove-billed Ani.

The capture of a single specimen of this bird near the Huachuca Mountains has been recorded by O. C. Poling. (See Auk Vol. VIII, 1891, page 313.)

Geococcyx californianus (Lesson). Road-runner.

Road-runners are fairly abundant all through the foothill region, and I occasionally saw them far up the canyons; at least once at an altitude of about 6500 feet.

Coccyzus americanus occidentalis Ridgway. California Cuckoo.

A rare migrant, but of fairly regular occurrence both in spring and fall. Along the San Pedro River it is a fairly common summer resident, breeding in all suitable localities; but in the mountains it is only a stray pair or two that remains to breed. O. W. Howard found a nest containing two badly incubated eggs, on June 28, 1896, in Ramsey Canyon at an altitude of about 6000 feet. The eggs were beyond saving and were left, and a day or two later young birds were seen in the nest. An adult male was secured on August 21, 1902.

Trogon ambiguus Gould. Coppery-tailed Trogon.

Probably of fairly regular occurrence in the mountains during the summer months. I have never been fortunate enough to run across any myself, but O. W. Howard informs me that he has seen them on several occasions, and specimens have been taken by G. F. Breninger, R. D. Lusk, and others. A hunter on the west side of the mountains told me that he had killed one in the summer of 1902, and that he knew of another that was killed close by at about the same time.

Ceryle alcyon (Linnaeus). Belted Kingfisher.

On April 15, 1903, a Belted Kingfisher lit on a tree overhanging the tent I was occupying, and gave utterance to his loud rattling call to announce his arrival. This is the only occasion on which I have seen this species in the mountains; none of the streams are large enough to support any fish, and an occasional stray bird which drops in to rest during the migration, is probably all that visits the range.

Dryobates villosus hyloscopus (Cabanis). Cabanis Woodpecker.

Fairly abundant in the higher parts of the mountains, from 7000 feet upward. They may be seen almost anywhere in that region, but for breeding purposes, seem to particularly favor the dense thickets of quaking asp. They do not seem to remain through the winter months; at any rate I saw none during February, 1903, nor did any appear until March 17, when I secured two and saw one other. Ten days later they were quite abundant. The winter of 1902-1903 was quite cold, with a great deal of snow on the ground, and it is possible that with a milder winter they might remain the year through. There does not seem to be any vertical migration on the part of this woodpecker, for I saw none below 7000 feet, and but very few as low as that. Specimens from the Huachucas compared with Southern California examples of *hyloscopus* average rather smaller, with decidedly smaller and weaker bills.

Dryobates scalaris bairdi (Malherbe). Texan Woodpecker.

On the dry and comparatively barren foothills the Texan Woodpecker is a fairly abundant resident, breeding usually in the dead stalks of the mesal plant, which grows in abundance throughout the mountains. This woodpecker is seldom seen above 5500 feet, and rarely ven-

tures into the canyons. On the plains below, wherever there is brush or trees, and all along the San Pedro River it is very common, as in fact, I have found it in all similar places I have visited in Southern Arizona. I have frequently observed the bird feeding in small bushes close to the ground, and often at work on the leaves of a cactus, seeming to be generally less dependant on the presence of large timber than any of the other woodpeckers.

Dryobates arizonae (Hargitt). Arizona Woodpecker.

Although the Arizona Woodpecker is resident the year through in the Huachucas, it is singular how the birds seem to disappear in the breeding season, that is from the middle of April to the middle of June, when the young birds begin to leave the nest. During this time their loud shrill call may be occasionally heard from some wooded hillside, but the birds themselves are seldom seen. I have taken specimens from the base of the mountains, about 4500 feet altitude, up to 8000 feet, but they are not often seen above 7000 feet. In the winter they seem to more particularly favor the large groves of live-oaks along the foot-hills and at the mouths of the canyons; scattering over the mountains and ascending to rather a higher elevation upon the advent of the breeding season. They breed indiscriminately in the large trees along the canyon streams, in the oaks on the hillsides, and occasionally in a dead mescal stalk in the same locality as the Texan Woodpecker. Although a fairly common bird in the region they frequent, I have never found them at all gregarious; except in the summer when a pair of old birds with three or four young may frequently be seen; never more than a single brood however and these small gatherings break up before the young acquire the adult plumage. What I have frequently seen though, occasionally even in the breeding season, is two old males bearing each other company, and usually sticking pretty close together.

About the third week in April they commence laying their eggs, and after the middle of June the young birds begin to leave the nest, and soon become quite abundant. I have never had any difficulty in approaching these birds as they are usually quite tame and unsuspecting; far more so than the generality of woodpeckers, and the young birds are noticeably so. I have several times stood within ten feet of a young bird, easily distinguishable by his red cap, as he was industriously pounding on a limb without seeming in the least disturbed by my presence, or showing any inclination to leave. On one occasion the confiding, and in this case inquiring nature of the bird occasioned rather a laughable scene. An acquaintance in the mountains, passing the camp one day stopped to lead his horse down to the well which supplied us with water. A young Arizona Woodpecker was sitting in an oak tree close by, and soon after the horse began drinking he flew down, and lighting on the animal's hind leg as on the side of a tree, hit it a vigorous rap or two. The horse and its owner appeared equally surprised, and both moving a little the bird retreated to his tree. It wasn't a minute before he was back again, this time on a front leg, where he went to work with such energy as to start the horse plunging and kicking in an effort to get rid of its curious assailant. The woodpecker left but did not seem to be particularly frightened, as he sat on the wooden curb of the well until he was left alone again.

The Arizona Woodpecker commences to moult about the middle of July, and by the first week in September the new plumage is almost completely acquired. The plumage of the breast, abdomen, and lower parts

generally, seems to be the first to be renewed, while the remiges, rectrices and feathers of the interscapular region are the last to get their growth. An old female shot on September 3 had practically completed its moult, with the exception of the tail feathers, none of which were over half an inch long; while several specimens of both sexes, taken during the last two weeks in August, are in nearly perfect autumnal plumage, except for some small patches of old feathers in the interscapular region. Fall specimens are considerably darker on the back than birds taken during the spring and summer, but the change is undoubtedly due to fading of the plumage, as birds taken in the late winter and early spring, show not the slightest traces of moult, and a series of birds taken from February to July, show plainly the gradual change of coloration. Singularly enough the pileum and back of the neck does not seem to fade as the dorsum does, and consequently, while birds in fresh fall plumage are of practically uniform coloration on the upper parts, specimens taken in the late spring and summer have the head and neck abruptly darker than the back and exposed portion of the wings. Young birds of both sexes have the pileum red, and although it is not always safe to lay down rules concerning young birds, the sexes not always being easy to ascertain with certainty, there seems to be some difference in the marking of the juvenile male and female. In no case does the red cap extend over the entire pileum; the anterior portion is always brown like the back, and in some young females half the surface is without any red. In the young female, besides occupying a less extensive surface, the red is less intense than in the male, and not as solid, that is there is always more or less brown showing through. The red cap of the juvenile bird seems to be worn but a short time, as a young female taken September 4 has hardly a trace of it remaining. Young birds are lighter underneath than the adult, with the markings of the under parts less plainly defined, but there is a difference in this respect between autumnal and spring adults also; and in each instance it is caused by the dark markings being obscured by light colored edges to the feathers, which disappear by abrasion later on. Of twenty-four specimens from this region four show more or less traces of white bars across the rump; one of these is a male in nuptial plumage, one a male in freshly acquired autumnal plumage, one a female in nuptial plumage (this specimen has some faint indications of white bars on some of the scapulars as well), and one is a young male. Another spring female has some white bars on the scapulars but none on the rump. Presumably this is a tendency toward the Mexican species *Dryobates stricklandi*.

Sphyrapicus varius nuchalis Baird. Red-naped Sapsucker.

In February, 1903, I found this species fairly abundant in the Huachuacas, and pretty equally distributed over all parts of the mountains; though possibly more abundant in the pine forests of the higher parts of the range than elsewhere. They remained in diminishing numbers up to March 26, on which date I secured the last one I saw. I was rather surprised at their leaving so early, the more so that during the previous year the only one I saw for the season was a male which I secured on April 25. Nearly all the specimens secured showed more or less signs of moult on the throat and breast, though not elsewhere. One young male, shot February 21, had but a few scattered red feathers on the crown, and one or two black ones on the breast; the red throat patch being nearly perfect. In the specimens secured the color of the lower parts varies from almost pure white to rather bright sulphur yellow.

Sphyrapicus thyroideus (Cassin). Williamson Sapsucker.

On April 6, 1902, I saw about a dozen Williamson Sapsuckers near the summit of the mountains at an altitude of about 9000 feet. Though not at all in a compact flock they seemed to keep rather close together, and when one flew any distance away, the others soon followed. The bulk of them were females, and but one or two males were seen, one of which was, with great difficulty secured, for they were very wild. On April 9 several more were seen and a female secured at this same place; and a male was taken a mile or two from this place, at an altitude of nearly 10,000 feet. These were the last I saw in the spring, though they do occur later as I have a female that was taken in the Huachucas by H. Kimball on April 20, 1895. On August 30, 1902, I secured a female in Tanner Canyon at an altitude not over 7000 feet, the lowest point at which I have seen this species in the mountains. I think that this bird was a migrant returning south early, as I doubt very much if they breed anywhere in the Huachucas. On February 21, 1903, I shot a female at the same place where I had seen so many the previous year; it was a favorite locality for *nuchalis* and I took several of that species there, but saw no more of *thyroideus*, nor were any more seen for the remainder of the time I was in the mountains.

Melanerpes formicivorus aculeatus Mearns. Ant-eating Woodpecker.

A most abundant summer resident in the lower parts of the mountains; a few winter here but they are scarce during the cold weather. I saw but two or three during February and the early part of March, about the middle of March they began to arrive in numbers, and by April 1 were most abundant. Primarily a bird of the oak woods they seldom venture into the higher parts of the mountains, breeding almost entirely below 6000 feet. About July 1 the young birds begin to make their appearance so like the adults in general appearance that it is difficult to distinguish between them. The young of both sexes usually have the entire crown red, as in the adult male, but of a duller color, more of a brick red; but one young female secured has the red area very limited and coming to a point behind, so as to form a small, triangular shaped patch on the crown. Of seventeen specimens collected in the Huachucas, three show, more or less distinctly, white markings on the outer tail feathers. In one of these, an adult female, the marks consist of indistinct white spots, mostly on the inner web. The other two, juvenile females, have the outer feathers distinctly, though irregularly, barred with white for about half their length.

Aculeatus seems to me to be a perfectly good subspecies, intermediate in characteristics and habitat between true *formicivorus* and *bairdi*, as claimed for it by its describer. (See Auk Vol. VII, 1900, 249). My Huachuca Mountain birds have the "solid" black breast of *bairdi*, and in the coloration and markings of the lower parts generally, are absolutely indistinguishable from that race; but they are smaller, with smaller and weaker bills, and possess one important characteristic overlooked by Dr. Mearns in his description of *aculeatus*, which serves to distinguish them from either *formicivorus* or *bairdi*. This is the pattern of coloration of the crown in the females, in which respect the Arizona birds apparently approach the Lower California form *angustifrons*. In most cases the width of the white or yellow frontal band and the black crown band is about equal to the width (longitudinally) of the red occipital patch. Occasionally it is a trifle greater, but invariably the black

crown patch is much more narrow than in *bairdi*. The red occipital patch in the female is usually almost square in shape.

Following is a table of measurements of ten specimens of *Melanerpes formicivorus aculeatus* from Southern Arizona:

Number Coll. H. S. S.	Sex	Date	Locality	Length	Alar expanse	Wing	Culmen
3414	Male	Feb. 25, 1903	Huachuca Mts.	9 56	17 50	5 31	1 06
3544	"	Mar 19, "	" "	9.18	17 37	5 44	1.12
3121	"	Aug. 21, 1902	" "	9 18	17.69	5.75	1.
2906	"	July 4, "	" "	8 50	16.37	5 31	.94
6292*	"	June 20, 1903	Sta. Rita "	10.	17.31	5 56	1.
3490	Female	Mar 10, "	Huachuca "	9 06	17.25	5.50	1.
3044	"	Aug. 12, 1902	" "	8.87	17.50	5 56	1.
3111	"	Aug 20, "	" "	9.06	17.44	5 62	.94
2904	"	July 3, "	" "	8.62	17 44	5.44	.94
6291*	"	July 20, 1903	Sta Rita "	9.	17.12	5 37	1.

* Collection of F. Stephens.

Asyndesmus torquatus (Wilson). Lewis Woodpecker.

Of irregular occurrence in this region, in 1902 I found them fairly common when I arrived in the mountains at the end of March, and they remained so until about the first of May. They did not venture into the canyons at any time, but remained in the groves of live oaks extending along the base of the mountains. The following year they did not put in an appearance at all, in fact this is the only year that I have seen them in the Huachucas.

Centurus uropygialis Baird. Gila Woodpecker.

Although the Gila Woodpecker is a common resident all along the valley of the San Pedro River, in the Huachuca Mountains it is of rare and very irregular occurrence. This woodpecker does not seem to migrate south from this region to any extent, but after the breeding season it spreads out over a greater area, and wanders to places it does not frequent during the summer. A such times it occasionally strays up into the Huachucas, but I doubt very much if any breed in the range. I saw one on August 30, 1902, and secured a female on March 9, 1903. One or two others were seen about the latter date but none later than March 15; all were right at the base of the mountains at an altitude of about 4500.

Colaptes cafer collaris (Vigors). Red-shafted Flicker.

A common resident throughout the mountains, but during the breeding season restricted to rather a higher altitude than at other times. They seldom breed below 5500 feet and from there on up become more and more abundant as the summit is approached. They begin to lay the first week in May and the full grown juveniles are tolerable abundant by the third week in July.

Antrostomus vociferus macromystax (Wagler). Stephens Whip-poor-will.

A fairly abundant summer resident, occurring principally between 5000 and 8000 feet; they may occasionally occur at a little higher elevation, but I have never seen any below the lowest altitude given. In 1903 the first I saw was on April 28, and soon after their notes could be heard every evening, usually from some thickly wooded hillside, near the bottom of the canyon. The birds themselves were but seldom seen and I never observed any alight on a road or trail, as their near relative the

Poor-will does so habitually of an evening. They seem to remain rather late in the fall, as at the end of August their notes were heard as frequently as ever, and I have a female taken by H. Kimball on September 29, 1895. An adult male secured on August 29, 1902, had not yet quite completed its moult.

Phalaenoptilus nuttalli (Audubon). Poor-will.

I found the Poor-will quite abundant during the summer months in the foothill region and in the lower parts of the canyons; but though most numerous below 5000 feet they were by no means restricted to these parts, for I saw or heard some in all parts of the mountains occasionally up to an altitude of nearly 10,000 feet. They began to arrive early in April and could soon be heard calling on all sides of an evening. Although usually silent during the night, I have frequently noticed that in the morning they begin again, and for half an hour or so before daylight, call nearly as much as they do in the evening. They show great fondness for any open piece of ground, and about dusk can usually be found along any road or trail, sitting on the ground and occasionally flying up after some passing insect. I cannot recall ever having seen a Poor-will alight on the limb of a tree, but on one occasion I saw one alight on a guy rope of a tent, where he remained for half a minute or so.

I have taken several specimens of the so-called Frosted Poor-will (*P. n. nitidus*) but have not much faith in the validity of this race, believing it to be merely a color phase of *nuttalli*. My series of Poor-wills from Arizona contains some very pale colored birds which could easily enough be distinguished from true *nuttalli* as far as color is concerned, but it seems strange to find two closely related sub-species like these occupying the same region and breeding side by side, as it were. I have taken both the pale and the dark colored birds in the foothills of the Huachuca, and at the summit of the highest peaks, both being more numerous during the migrations than at other times. If several pairs of birds could be obtained and shown to be of the same style of coloration, it might go to prove the validity of the race; but it is not easy to obtain both birds of a pair of a nocturnal species like the one under consideration, and though I secured both sexes, they were all single birds, mostly migrants. I have recently secured two exceedingly pale colored Poor-wills near San Fernando, Los Angeles County, California, demonstrating the presence of this light phase in *P. n. californicus* as well as in *nuttalli*. One of these is quite as pale as any specimen of "*nitidus*" that I secured in Arizona.

I have talked on this subject with Mr. G. F. Breninger, who has done a great deal of field work in Arizona, and believe that he holds the same view of it as I do.

Chordeiles virginianus henryi (Cassin). Western Nighthawk.

Quite a common summer resident, though as yet I believe that there is no positive evidence of its breeding in the Huachuca. The earliest date at which I have seen any is April 23, 1903, when a male bird was flushed from an oak tree near the mouth of one of the canyons. At times in the summer I have found them quite abundant in the oaks along the base of the hills (about 4500 feet altitude). They were invariably in the trees, sitting lengthwise of the limbs; and were very shy and hard to approach, at times flying to a considerable distance before alighting again. I never flushed one from the ground. Through the months of June and July, 1902, I found them very abundant on the divide at the

head of Miller Canyon, about 9000 feet altitude. They made their appearance soon after sunset and remained for an hour or so, hawking back and forth, usually within a few feet of the ground, sometimes thirty of forty being in sight at once; but they were difficult to shoot, as the light was poor and they seldom rose so as to be seen against the sky. A number a male birds were taken, but of females I secured but a single specimen. This was taken on June 23, 1902, and most undoubtedly was not a breeding bird. In the daytime, while shooting warblers and other small birds in the pines, several night hawks were flushed from limbs high up in the trees. I presume that in all probability they breed in the Huachucas, but I know of no one who has found any eggs in this region. The Texan Nighthawk I have never seen in the Huachuca Mountains, though along the San Pedro River it is a most abundant summer resident.

Chaetura vauxi (Townsend). Vaux Swift.

From the tenth to the fifteenth of May (1902) I several times saw a few Vaux Swifts flying about, usually late in the afternoon. They seem to be of rare occurrence in this region, as this is the only occasion on which I have seen any.

Aeronautes melanoleucus (Baird). White-throated Swift.

The numerous high rocky cliffs found throughout the mountains afford an abundance of nesting sites for these swifts; so that, as a rule, they are exceedingly abundant during the summer months, their shrill twittering notes being heard on all sides; and I believe that a few stay through the winter as well, as on February 26, 1903, I saw a small flock flying about during a snow storm. Altitude seems to cut but little figure with them, as I have seen them entering crevices in the rocks in all parts of the mountains, and they probably breed wherever the nature of the ground suits them. In feeding, however, they seem to congregate, in a measure, over the highest parts of the mountains, where I have seen them in greater numbers than in any other one place; passing from one side of the mountains to the other, and occasionally skimming over the ridge but a few feet from the ground, screaming and twittering almost continuously. Occasionally during July and August, the rainy season, I have been on the divide when black threatening thunder clouds were passing low over the mountains, and the flocks of swifts, flying beneath these heavy clouds produced by their wings a most peculiar sound; a continuous murmur, now loud and now low, utterly indistinguishable, but much like a crowd of people shouting in the distance. I heard the noise for half an hour or more one day before I was able to place it, for the birds were flying high, and were utterly silent as far as their vocal organs were concerned; being probably too busy feeding to indulge in their usual fights and squabbles, which are always accompanied by considerable noise. A nest of this species was, with the greatest difficulty, reached and examined by O. W. Howard and W. B. Judson, on June 9, 1896. The nest was in a crevice in a high over-hanging cliff, and at this date a single egg was found lying on the rock outside the nest. On June 18 three eggs were taken from this nest. Aside from the difficulty and great danger usually attendant on approaching the nests of these birds, it is generally labor thrown away, as the crevices in which they breed often run far back in the rock, and the eggs are as much out of reach when the opening is reached as before.

Eugenes fulgens (Swainson). Rivoli Hummingbird.

On the first day I spent in the Huachucas, April 26, 1896, almost the first bird I saw on leaving camp in the morning, was a male Rivoli Hummingbird, two of them in fact; and the size and beauty of the bird made an impression on me at the time that even considerable familiarity with the species has not effaced; as it is without question, the handsomest of the North American Hummingbirds. The date given above is the earliest at which I have seen it in the mountains, and the birds become more and more abundant as the summer advances. As is the case with the rest of the hummingbirds the male *fulgens* is never seen near the nest, but remains almost entirely in the higher pine forests, and in my experience, only a stray bird is occasionally seen in the lower canyons. The breeding females are found principally along the water courses between 5500 feet and 7500 feet; the nest being frequently built in the maples along the streams, sometimes at a considerable height, forty or fifty feet above ground. On May 18, 1896, an unfinished nest was found, while on May 26, of the same year, two sets of eggs were taken; Mr. Howard has recorded the taking of a set as late as July 25, 1899, (Condor Vol. II, 1900, page 101); and on August 3, 1902, I saw a female on a nest, but did not disturb her as it was in rather too inaccessible a position. Toward the end of summer I have occasionally seen females down quite to the base of the mountains, but not often. A favorite resort of the Rivolis, in fact of most of the hummingbirds in this region, are the flowering stalks of the mescal plant, which grows in profusion all over the mountains; in 1902, I saw but one or two male *fulgens* before the mescals were in bloom, which was quite late, nearly the end of July, that year. In the spring of 1903 hummingbirds of all species were scarce in the mountains, though there was an abundance of wild flowers, more so than usual; I saw a few female *fulgens* along the canyon streams, but up to the time I left, the end of May, I had not seen a single male.

Coeligena clemenciae Lesson. Blue throated Hummingbird.

A summer resident in the mountains, but in my experience not nearly as common as the Rivoli. The two species are sufficiently alike to be confused while flying about, but I have seen but two or three that I could be positive belonged to this species, and succeeded in obtaining but a single bird. This one, a male, was taken on May 27, 1903, while feeding on a honeysuckle in a garden; and was extremely shy, darting off the moment it caught sight of me, and staying away for a considerable length of time.

Trochilus alexandri Bourcier & Mulsant. Black-chinned Hummingbird.

A very abundant summer resident, probably the most common hummingbird of this region. I have occasionally seen the male bird up to an altitude of 7000 feet, but they are most abundant below 6000 feet, and breed from that altitude down to the base of the mountains and as far down the washes as there is any vegetation. The earliest date on which I have seen this species was April 26, 1902, and on September 5, when I left the mountains, they were still abundant.

Calypte costae (Bourcier). Costa Hummingbird.

Costa Hummingbird begins to appear in the mountains about the first of July, and some years becomes exceedingly abundant. In 1896 they were particularly numerous, but nearly all immature males show-

ing just a trace of the violet coloration on the throat. Some adult males also were taken, but hardly any females; these were probably still attending to their family duties, as I have seen nests with eggs along the San Pedro River in July. They breed quite commonly all along this valley, and possibly a few breed in the mountains, but I do not know of any nests being found there. They do not ascend to any great height in the Huachucas and I have never taken one above 5500 feet.

Selasphorus platycercus (Swainson). Broad-tailed Hummingbird.

Although generally distributed over the mountains, and at times quite common, this hummingbird is still far more often heard than seen. The shrill buzz of its wings, that is of the male bird, is frequently heard; and time and again as the sound approached, passed, and died away in the distance, I watched, but in vain, to catch sight of the author of it. Several times I have seen one leave his perch on a twig and dart off in pursuit of another of the same species, and even then was unable to follow him with my eye; and though presently the sound of wings announced his return, I was seldom able to see the bird before he dropped onto his perch. It is possible that this species remains in the Huachucas through the winter as I saw a male bird near the base of the mountains on February 28, 1903; and though not at all common, I saw and heard them a number of times through the month of March. It was the middle of April before they began to appear in any numbers, and from then on they became more and more abundant. At this time they were seen at a low altitude and along the canyons; but after the summer rains began and the grass and flowers sprung up, I found them mostly in the highest parts of the range. At this time they were not nearly as restless and pugnacious as in the spring and were more easily approached. I have occasionally shot them on mescal plants, but they do not seem to feed on them nearly as much as some of the other hummingbirds do. The flight of the female is not accompanied by the buzzing noise made by the male bird, and from their habits they are more inconspicuous and less frequently seen than their mates. They breed in the highest parts of the mountains, often in the pines and at a considerable distance from the ground.

Selasphorus rufus (Gmelin). Rufous Hummingbird.

I have not seen this species at any time in the spring, but about the middle of July they begin to make their appearance; and throughout the month of August I found them very abundant, but frequenting the highest parts of the mountains, principally; more being seen between 8000 and 9000 feet than elsewhere. The flowering mescal stalks are a great attraction to them, and they seem to frequent them in preference to anything else. I have seen as many as twenty Rufous Hummingbirds around a single stalk, mostly immature birds, but with a fair sprinkling of adult males. No adult females were taken at any time. The old males were, as usual, very pugnacious, and objected to any other hummingbird feeding on the plant they were patronizing; but as they could only pursue one at a time, and as the one pursued promptly returned as soon as the chase ended, there was more or less confusion going on about these plants all the time. Upon finding a mescal in full bloom I frequently watched it for some time in the hope of securing some rarity, but in the twittering, whirling mass of birds it was no easy matter to distinguish the species. Occasionally a Rivoli would dart in, a giant among pygmies and easily enough distinguished, but for the rest it was mostly guess work.

Selasphorus alleni Henshaw. Allen Hummingbird.

Among a number of specimens of *Selasphorus rufus* from this region I have found four of *alleni*. These are an adult male and immature male taken July 13, 1896; an immature male taken July 15, 1896, and an adult male taken July 30, 1902. The last mentioned was taken from a flock of *rufus* at an altitude of 9500 feet.

Stellula calliope Gould. Calliope Hummingbird.

After the summer rains the mountains present an exceedingly inviting appearance, particularly so in the higher parts, along the ridges and on various pine covered "flats," where, with the green grass, a multitude of brilliantly colored wild flowers springs up, often waist high, and in many places in solid banks of bright colors. In such places, in the late summer of 1902, I found the Calliope Hummingbird quite abundant, feeding close to the ground, and when alighting usually choosing a low bush. I did not see any around the mesquites, which at this time were past their prime, and aside from a few Rivolis did not attract many hummingbirds; nor did they seem very gregarious, a single bird, or at most two or three, being all that were seen at a time. The first one was shot August 14, and from then up to the time we left the mountains, September 5, they remained abundant in certain localities; none being seen below 9000 feet.

Atthis morcomi Ridgway. Morcom Hummingbird.

Known only from two females shot by H. G. Rising, July 2, 1896. These were taken in Ramsey Canyon, not together but not far distant from one another; and at an altitude of about 7500 feet. I have looked carefully for this species since then, but have seen nothing that I could ascribe to it, though possibly when *calliope* was so abundant there might have been some of *morcomi* with them without my noticing them, for the females, at least, of the two species are very much alike.

Basillina leucotis (Vieillot). White-eared Hummingbird.

In all probability the White-eared Hummingbird is a regular summer visitant to the Huachucas, though in small numbers. A female was taken by W. B. Judson on July 7, 1896; and in 1902, I secured a male on June 21 at an altitude of 5500 feet, and another August 14, at 7000 feet. On July 23 I saw still another at the same place where the last mentioned was secured. Mr. O. W. Howard tells me that he has seen them several times in the years intervening between 1896 and 1902, and on one occasion saw a female carrying building material. In 1903 I left the mountains at an earlier date than I had seen the species in the region, but a few weeks later, on June 24, I was in company with Mr. F. Stephens when he secured a male in the Santa Rita Mountains, some forty miles to the northwest of the Huachucas, at an altitude of 5500 feet. This one is not an adult bird, but is in a stage corresponding to one often met with in the male of *Calypte costae*, probably a bird of the previous year. In this bird (No. 6301 F. Stephens) the whole of the upper parts are dull green, the feathers of the rump being narrowly margined with brown. Forehead, dull brownish. Under parts (breast and abdomen) dull white spotted with green, as in the female. Throat, metallic emerald-green with a few grayish feathers intermixed, and with but the faintest trace, (one or two scattered feathers), of the beautiful sapphire-blue chin of the adult male. The white stripe on the side of the head is about the same, both in color and extent, and the auriculars are not even as dark, as in the female. The lateral rectrices (as is the case in the

opposite sex) are broadly tipped with white. Bill, black; base of mandible flesh color. In the adult male the base of the bill is compressed, similarly though not to such an extent as in *Iache latirostris*, but in this specimen it is quite as narrow as in the female. All the specimens secured were feeding on a scarlet flower, somewhat similar to a honey-suckle, but growing close to the ground.

Iache latirostris (Swainson). Broad-billed Hummingbird.

An extremely rare bird in this region. A male was secured on July 21, 1902, and I have seen a female taken by R. D. Lusk, July 10, 1897.

Platypsaris albiventris (Lawrence). Xantus Becard.

The capture of a male bird of this species on June 20, 1888, has been recorded by W. W. Price. (Auk Vol. V., 1888, page 425) Although Mr. Price mentions hearing the notes of several besides the one secured, and seemed to believe that the species would prove to be a regular summer visitant to the Huachuca Mountains, it has not since been met with by any collector in this region, and is probably extremely rare and irregular in its occurrence over our borders.

Tyrannus verticalis Say. Arkansas Kingbird.

The Arkansas Kingbird is found most abundantly in the washes leading from the various canyons; and breeds in large numbers as far down these washes as the trees extend. They occasionally venture up into the mountains but not often; and while breeding the nests stop so abruptly at the mouths of the canyons that I am uncertain if it is on account of the altitude, or because they prefer the open country below to the more restricted canyons. They are late late in getting here in the spring; considerably later than in Southern California, the earliest arrival noted at the Huachucas being three weeks later than the time the species reaches Los Angeles, which is considerably further north. In 1902 the first seen was on April 8, and it was a week later before they were at all abundant. The following year the first seen was on April 14, and the bulk of them were correspondingly later in making their appearance. During the breeding season the large numbers of White-necked Ravens and Swainson Hawks found in the vicinity afford the Kingbirds exceptional opportunities for exhibiting their peculiar talents, and during the summer months these wretched birds' lives are made a burden to them through the incessant persecution they receive. The hawks usually leave as soon as possible on being attacked; but the ravens, though beating a hasty retreat often try to fight back, twisting from side to side in vain endeavor to reach their diminutive assailant; cawing a vigorous protest, meanwhile, at being treated in such a disrespectful fashion. On September 5, 1902, I saw a large number of Kingbirds, both *verticalis* and *vociferans*, sitting along the fences in the valleys evidently migrating; and apparently in the midst of their moult, as they presented a very ragged appearance.

Tyrannus vociferans Swainson. Cassin Kingbird.

It is rather a singular fact that although this species winters abundantly in Southern California, in this region it arrives in the spring at the same time, and usually in company with *verticalis* the earliest being on April 8. In breeding it ascends to rather a higher altitude than that species, the majority of the nests found being between 5000 and 6000 feet; I have occasionally, but not often seen the birds as high as 7500 feet, and I found one nest quite at the mouth of the canyon, 4500

feet; but as a rule, the territories occupied by this species and *verticalis* during the breeding season hardly overlap. All the nests of this species I have seen in this region were built in sycamores, usually at a considerable distance from the ground. In 1896 a set was secured on June 20, and another on June 26. They probably leave in the early fall, for as I before remarked, I have seen both this species and *verticalis* evidently migrating in the early part of September.

The Cassin Kingbirds do not seem to persecute the hawks and other large birds to such an extent as the Arkansas does, but they are far more noisy; and at times, particularly in the early morning, make a fearful racket. Commencing shortly before daybreak, they keep up a continuous clamor, generally on the wooded hillsides, to such an extent that it seems like an army of birds engaged. They do not seem to be quarreling or fighting at these times, for those I have seen merely sat, screaming, on the top of some tall tree. This racket is kept up until about sunrise, when it stops rather abruptly.

Myiodynastes luteiventris Sclater. Sulphur-bellied Flycatcher.

This species, though a handsome, strikingly marked bird, and at times an exceedingly noisy one, is yet so shy and retiring, that, far from being conspicuous, a person unfamiliar with the habits of the species might collect for weeks in a region in which it abounded and not know that there were any around. Frequenting as they do, the tops of the tallest trees along the canyons, which are thickly covered with foliage at the time these birds arrive, a far brighter colored bird might easily escape observation; and as their colors, though striking, blend exceedingly well with the surrounding vegetation, they are by no means easy to see; the more so that they frequently sit perfectly motionless for a considerable length of time. It has happened more than once, that, hearing the familiar note in some tree top, I have watched, sometimes for half an hour, endeavoring to see the bird; scanning, as I supposed, every twig on the tree, only to see it finally depart from some limb where it had been sitting, if not in plain sight, at any rate but very imperfectly concealed. The call note is loud and shrill, and there are times when they are quite noisy, particularly so when pairing off. At this time three or more can occasionally be seen pursuing one another through the tree tops and keeping up a continuous clamor. Occasionally also, I have heard a single bird calling in the early morning, from some tree top, as the Cassin Kingbirds do. Though noisy their vocabulary is limited and I have never heard but the one shrill call from them, a note hard to describe but very much in the style of the familiar two-syllabled whistle of the Western Flycatcher (*Empidonax difficilis*). Of course the volume is infinitely greater than with the little *Empidonax*, but they resemble each other to this extent, that I have known a person familiar with the Sulphur-bellied Flycatcher to mistake a *difficilis* near at hand for the larger flycatcher in the distance.

They are late in reaching their breeding grounds, about the latest of all the birds of this region, May 19 being the earliest date at which I have seen any, and about a week later nearer the usual time for the first arrival. The nest is built in a natural cavity in a tree, invariably in a sycamore as far as known; and Mr. O. W. Howard, who has taken a good many sets of eggs, has demonstrated beyond question that the same cavity is used year after year, but that the same pair of birds occupies it indefinitely is, I think, open to question. I have, as I before remarked, seen two or more males contesting for a female, to the ac-

companiment of considerable clamor, and those I have seen first in the summer have invariably been single birds. Of course those I have seen pairing might have been birds hatched the preceding year, or old birds whose mates had been killed; and possibly when both of a pair survive they repair to their old nest of the previous year. On July 10, 1902, in company with Mr. O. W. Howard about half a dozen nests of this species were examined. Although in each instance both birds were seen about the cavity, and exhibited considerable excitement at the invasion of their privacy, no eggs were found, and only two of the nests showed signs of having been recently constructed. From these two nests Mr. Howard secured sets later, on July 21. On August 30, 1902, four juveniles were secured, two hardly able to fly and two nearly full grown. The latter, in markings and coloration, are practically indistinguishable from adults. The concealed yellow crest of the old bird is lacking, the feathers of the crown merely having their bases pale saffron, not sharply defined and hardly apparent at a casual glance; and in the very young birds even this feature is almost entirely absent. Also, the dark median stripe of the rectrices is more narrow than in the adult; aside from this the only point of difference are the slightly darker, more brownish appearance of the upper parts; and the softer, more blended, appearance of the plumage, as is usually the case in young birds.

This species does not occur in the higher parts of the range, nor is it found in the foothills. Preeminently a bird of the heavily wooded canyons, it is seen only along the streams; and all I have seen have been between 5000 and 7500 feet, altitude. It is most abundant in Tanner Canyon, a broad, well watered canyon with a far more gradual ascent than any of the others. It is on this account, I think that this flycatcher occurs in it so much more abundantly than elsewhere, for besides being the longest canyon in the range, the head of it is at the lowest point along the divide; thus giving the greatest area at the altitude favored by this species of any canyon in the mountains. This canyon seems to be abundantly suited to the needs of this flycatcher for almost its entire length, and I have seen them very nearly to the head of it.

***Myiarchus cinerascens* (Lawrence).** Ash-throated Flycatcher.

A common summer resident in the lower parts of the mountains, breeding generally throughout the foothill region and along the canyons, and down the washes nearly as far as the vegetation extends. It arrives early in April; in 1902 the first seen was on April 13, and the following year April 9; while on the latest date I have been in the mountains, September 5, it was still fairly abundant.

***Myiarchus cinerascens nuttingi* (Ridgway).** Nutting Flycatcher.

Out of a considerable number of specimens of *cinerascens* from the Huachuclas, just two examples of *nuttingi* were found; so judging from this it would seem to be of rare occurrence in this region. These two, both females, were taken June 17, and July 13, 1896, and were evidently breeding in the vicinity. They were both taken at rather a low altitude, almost at the base of the mountains; so very possibly, though rare in the Huachuclas, they occur more abundantly in the valleys below.

***Myiarchus lawrencei olivascens* Ridgway.** Olivaceous Flycatcher.

Though during the summer months the Olivaceous Flycatcher is found in considerable numbers through the lower parts of the mountains; still from its retiring habits, its mournful, long drawn, note is heard far more often than the bird itself is seen. Seldom venturing into

open ground, it loves the dense, impenetrable scrub oak thickets of the hillsides better than any other place, though also found along the canyon streams wherever the trees grow thick enough to prevent the sun from penetrating. It seldom ascends the mountains to any great height, 7500 feet being about the upward limit of the species, and it is most abundant below 6000 feet. They breed down quite to the mouths of the canyons, and on one occasion during the migration I secured one in a wash over a mile from the mountains. This, however, is quite exceptional. These flycatchers begin to arrive early in April, the first noted being on April 6, but it is a week or ten days later before they are at all abundant. They seem to disappear during the breeding season, and though really very abundant, their plaintive note, heard occasionally from some dense thicket is almost the only evidence that the birds are still around. Consequently not a great deal is known of their breeding habits. All the nests I have seen, some six or eight, all told, were built at a considerable distance from the ground, from twenty to fifty feet. They seem to breed rather late, as Mr. Howard secured a set on June 17, 1902, and on July 25 I shot a young bird which had only just left the nest. They begin to leave as soon as the young have attained their growth, being about the first of the summer residents to move south. Their numbers decrease rapidly after the end of July, and by the middle of August there were practically none left in the mountains. I saw no more, and supposed that they had all left, until September 3, when I came onto a pair of the birds feeding several young. This was right at a place where Mr. Howard had secured a set of eggs earlier in the season, and I have no doubt that, as neither of the parent birds were shot, they reared another brood and were correspondingly delayed in leaving. Young birds collected, of various ages, differ from the adults in having the upper parts more of a brownish color, and the lower breast and abdomen, light yellow in the adult, very pale, in some cases almost white with just the faintest tinge of yellow: wing coverts, tertials and secondaries are broadly, and primaries narrowly margined with rusty fulvous, while the rectrices are broadly margined with the same.

Sayornis saya (Bonaparte). Say Phoebe.

Resident in the foothill region, and along the base of the mountains generally, though in limited numbers. During the migrations they appear rather more numerous, but never venture far up into the canyons. A favorite nesting site is a well or some similar excavation, or an old abandoned adobe house. At the postoffice at Turner, some six or seven miles below the mountains, a pair of Say Phoebes has built a nest over the doorway, and bred there for many successive seasons; and not only do they breed there year after year, but the same individual pair of birds seems to stay there the year through.

Sayornis nigricans (Swainson). Black Phoebe.

The Black Phoebe occasionally breeds in the Huachucas up to as high an altitude as 6000 feet, but it is anything but a common bird in this region and does not remain at all through the winter months. The earliest date at which I saw any was March 15, 1903, when a single bird was seen; for the next week or two an odd bird was seen now and then evidently migrating, and after that, no more appeared. About the first of August they began to appear in the lower parts of the mountains, evidently moving up from the river valleys where they breed in greater abundance. At this time they were just commencing the autumnal moult

and were consequently extremely ragged and disreputable in appearance. I did not secure enough specimens to admit of extended comparison, but the few I have are absolutely indistinguishable from Southern California birds.

Nuttallornis borealis (Swainson). Olive-sided Flycatcher.

The Olive-sided Flycatcher occurs regularly in the Huachucas during the migrations, but is never at all abundant; five or six being about as many as I have seen in the whole course of a migration. It is rather a late arrival, and the extreme dates at which I have noted the species are from April 20th to May 28th. In the fall the first and only one I saw was on August 30th. Though a bird of the highest altitudes in the regions in which it breeds, these migrating birds never seemed to ascend the mountains to any height, none being seen above 6000 feet.

Contopus pertinax pallidiventris Chapman. Coes Flycatcher.

During the summer months this flycatcher is one of the characteristic birds of the pine regions of the Huachucas, where if not seen, it can at least be heard almost everywhere. It is one of the first of the summer residents to arrive, and one was heard calling as early as March 29th. The usual time of arrival is the first week in April, and during this month they can be found generally distributed over all parts of the mountains; while I have taken specimens, evidently migrating birds, quite at the base of the range, as late as May 25th, though others were found breeding at an earlier date. In its breeding, in fact in its habits in general, it closely resembles the Olive-sided Flycatcher, but I have never found it migrating out in the plains and valleys as that species quite generally does. As with *borealis* the male bird is fond of getting in some elevated position, usually the extremity of a dead limb at the top of some tall pine or fir, and remaining there for hours, uttering at frequent intervals its loud, characteristic call. In character and tone this call is quite similar to that of *borealis*, but the notes differ. The local name for the species, derived from its cry, is Jose Maria (pronounced, Ho-say Maria, with the second syllable of the last word drawn out and emphasized), a far better translation of the sounds that is the case in many similar instances.

During the breeding season these birds are to a great extent restricted to the higher parts of the mountains, being most abundant from 8000 to 10,000 feet; though I have seen one or two nests as low as 7000 feet. In the choice of a nesting place they show a marked preference for the conifers, the nest being usually built at a considerable distance from the ground, on some limb affording a wide, uninterrupted outlook, but there again no hard and fast rule can be laid down, as I have seen nests built in maples in the bottom of a canyon, not twenty-five feet above the ground, and nearly hidden by the luxuriant foliage. I have seen birds beginning to build in the middle of May, and eggs can be occasionally be found until at least the middle of July. On July 23, 1902, I secured a young bird which had just left the nest but was as yet hardly able to fly, and two weeks later broods of young, attended by the parents could be seen everywhere. After the young had left the nest, a general movement toward a lower altitude began, and by the middle of August young and old could be found quite commonly along the canyons, and in the groves of live oaks at the mouths of the same. The young birds collected differ from the adults in having the abdomen and lower tail coverts and sometimes the center of the throat as well, buffy ochraceous,

rather sharply defined against the dark colored breast and sides. The greater and middle wing coverts are edged with a darker shade of the same, so as to form two conspicuous bars across the wing. An adult female taken August 24, 1902, just commencing the autumnal moult, has most of the plumage so worn and faded as to have lost all distinctive coloring, but on the upper breast and on the dorsum the new feathers are just beginning to appear.

Contopus richardsoni (Swainson). Western Wood Pewee.

During the summer months this species is found in abundance in the lower parts of the mountains, occurring almost entirely, at least in the breeding season, along the canyon streams, and but seldom venturing up on the hill sides. It is a late arrival in this region, the earliest one noted being on May 4, 1903, and it is the middle of the month before they are at all abundant. Migrating birds were seen on the plains below the mountains up to nearly the end of May. Old birds were noted feeding young still in the nest after the middle of August.

Empidonax difficilis Baird. Western Flycatcher.

Although the Western Flycatcher breeds in the Huachucas it is anything but a common bird, and even during the migrations is not as abundant as some of the other species of *Empidonax*. It is a late arrival in this region, the earliest one noted being a male bird shot on May 18. Up to the first of June it can be found in limited numbers in the washes leading from the various canyons, not occurring at all in the higher parts of the mountains, from 7000 feet upward, where it breeds. On June 21, 1902, a nest was found, apparently just finished, but empty, built on a beam in an old cabin at an altitude of 9000 feet. The bird had been seen about the place a week earlier but at that time had not yet commenced to build. After examining the nest I left the cabin for a few minutes, and at my return the bird darted out over my head, having laid an egg during my brief absence. On visiting the place a few days later I found the nest torn apart and the eggs destroyed, probably by the rats which infested the place. After the breeding season they descend the mountains to a lower altitude, and after the first of August young and old are fairly abundant in the oaks of the foothills, and along the washes as in the spring.

Empidonax trailli (Audubon). Traill Flycatcher.

On August 9, 1902, I secured two Traill Flycatchers in some scrub oaks at the base of the mountains. This is the only record I have of the occurrence of this species in the Huachucas, though it is a fairly common summer resident in suitable spots along the San Pedro River. The two secured, both adult males, had not yet begun to moult their summer plumage, and compared with specimens from Southern California are very pale in coloration. There is hardly a trace of olivaceous on the back or yellow in the abdomen, and at a casual glance, they bear a close resemblance to *E. griseus*, for which species, in fact, I mistook them when I shot them.

Empidonax hammondi (Xantus). Hammond Flycatcher.

Of the migrating birds passing through this region in the spring the Hammond Flycatcher is one of the first to put in an appearance, and about the last to leave. The earliest noted, a male, was taken on March 30; the bulk of them arrive early in April, and they remain in the greatest abundance until the middle of May, when they begin to rapidly

diminish in numbers, the last being seen May 22. In the spring I found them in all parts of the mountains, but most abundantly below 6000 feet, and usually along the canyons, not far from water. I was rather surprised when they re-appeared in August, not in the foothills and along the canyons, as before, but up in the pines, none being seen below 9000 feet. The first was seen on August 26, and from that time on, though not at all abundant, I found them in small numbers scattered through the pines along the divide.

Specimens of *hammondi* collected vary from very dark colored birds at the one extreme, with the abdomen strongly tinged with yellow, and in some cases with the breast, throat and even the back, strongly suffused with the same yellowish hue; to very grayish colored ones at the other, with the yellow of the abdomen almost, and elsewhere entirely, obliterated.

Empidonax wrighti Baird. Wright Flycatcher.

A fairly common migrant but a shy unobtrusive bird, and consequently easily overlooked. On my first visit to the mountains, in 1896, I failed to find the species at all; and the next time, in 1902, I mistook the birds for *hammondi*, which they closely resemble, until the different note (exactly the same in *wrighti* as in *griseus*, with which I was familiar) betrayed them. They arrive about the middle of April; in 1902 I shot one in the lowlands near the San Pedro River on April 17, but saw none in the Huachucas until April 25, after which they were quite abundant. In 1903 I secured the first on April 14 and the last, May 18. They were most abundant below 5000 feet, particularly favoring the foothill region covered with scrub oak, madrona, and manzanita bushes. I also found them where the canyons opened out into the plains below, but they were not entirely restricted to the lower parts of the mountains, for on one occasion, May 1, 1903, I secured two and saw several others in the pines on the divide, about 9000 feet, altitude. Wherever I found them, though, they were equally shy and difficult to get a shot at, and when in the thick brush, which they particularly love to frequent, their low, lisping note was heard far more often than the birds themselves were seen.

Empidonax griseus Brewster. Gray Flycatcher.

I found this species to be a common migrant in the Huachucas, more abundant than its near relative *wrighti*, and generally frequenting ground of a different character. Some specimens were taken along the various washes, but the region where they were most abundant was in the most barren of the foothill country; rough boulder strewn hills with but a scattering growth of scrubby live oaks. In such places I found them fairly abundant, that is I have seen as many as twelve or fifteen in the course of a morning's collecting; but they never ventured above the very entrance of the canyons, nor ascended the mountains at all. Though this flycatcher probably winters in some parts of Arizona (I have specimens taken at Tucson during February and March), and might be expected to breed in this region, it nevertheless occurs in the Huachucas merely as a migrant; though from the early date at which it reappears in the fall, it probably breeds at no great distance to the northward. The earliest noted was on April 2; they were most abundant about the first of May; and by the middle of May had all passed on. They appeared again the first week in August; one was secured August 6, 1902, and soon after they were fairly abundant in the same localities as in the

spring, remaining so throughout the month. All that were taken at this time were adults in worn, abraded plumage, many of them in the midst of the autumnal moult with hardly enough feathers to cover them. A series of twenty-one Gray Flycatchers taken in the spring from February to the middle of May, show some little variation in color and plumage, enough so to indicate a slight pre-nuptual moult. Specimens taken during February and the early part of March are in fresh, unworn plumage, soft and blended in appearance and with a considerable olivaceous on the dorsum. Those secured at the end of March and throughout April have the feathers rather worn and abraded, the upper parts dull grayish with a few new olivaceous feathers showing on the back. Specimens taken in May present a bright, fresh appearance, with the upper parts olivaceous with but a few of the old gray feathers remaining, and with considerable yellow on the abdomen. There is considerable individual variation also, the extremes of which are presented in my collection by a male bird taken April 2, 1902, which has the breast, sides, and flanks dark plumbeous, the throat a trifle paler, and but the middle of the abdomen white, with just a tinge of yellow; and a female taken April 22, 1896, in which nearly the whole of the under parts are pure white, the breast being darker on the sides and presenting rather a streaked appearance along the median line.

From the middle of April to the middle of May these three *Empidonax*, *hammondi*, *wrighti* and *griseus*, taken together, are a feature of the avian landscape in all parts of the mountains; *hammondi* along the canyons and in the pines, *wrighti* in the oak belt, and *griseus* in the more barren country along the base of the range; and during this time there is hardly a place where one or more of some one of these small flycatchers can not be seen, darting from tree or bush after some passing insect, or sitting on a twig with drooping wings and twitching tail.

***Empidonax fulvifrons pygmaeus* (Coues).** Buff-breasted Flycatcher.

The Buff-breasted Flycatcher is one of the rarest of the regular summer visitants to these mountains, and as it is a small, inconspicuously colored bird, and in my experience rather shy and difficult to approach as well, it is a species that is most easily overlooked. It arrives in the Huachucas about the middle of April, and all the migrating birds I have taken have been along the base of the mountains, where they were usually sitting in low bushes or weeds. In 1902, I secured but two, both males, during the spring migration; one on the evening of April 20, and another early the next morning at precisely the same place. In 1903 I secured a female on the west side of the mountains on April 12, and a migrating bird was shot as late as May 4.

Specimens collected show considerable variation in the color of the lower parts, irrespective of sex. The darkest colored one I have, a female, has the breast deep ochraceous buff, with the throat and abdomen but little paler; while a rather large sized male in fresh unworn plumage, has the upper breast yellowish buff, fading to pale yellowish on the throat and abdomen, almost white along the median line. Specimens taken during April frequently have a few new feathers scattered over the back, indicating at least a partial pre-nuptial renewal of the plumage of these parts. The buff of the lower parts extends up on the sides of the neck so that in many skins it nearly joins on the nape.

On May 26, 1903, I found these flycatchers breeding near the head of Tanner Canyon in such a way as to almost indicate a "colonizing" tendency, for I found seven or eight pair breeding within a radius of

about a quarter of a mile, and three or four of these were within a hundred yards of each other. This may have been due, however, to the exceptionally favorable nature of the ground; for it was different from most of the region thereabout in that the canyon opened out into a considerable area of low, rolling hills, covered with a scattering growth of large pines. Most of the birds seemed to be building, and two nests were located, nearly completed; one of them being saddled on a large pine limb, in plain sight and not over fifteen feet from the ground. As rather exhaustive accounts of the breeding of the species in this region have already been published (Condor Vol. I, 1899, 103; Vol. III, 1901, 38) there is no need of dwelling further upon it here.

Pyrocephalus rubineus mexicanus (Sclater). Vermilion Flycatcher.

Though seldom entering into the canyons, never above the mouths of them, the Vermilion Flycatcher is quite a common summer resident all along the base of the Huachucas, breeding principally along the various washes descending therefrom. The earliest arrival noted was on March 25; others were seen during the first week in April, but the bulk of them did not arrive before the middle of the month. The male birds vary considerably in coloration, and probably take at least two years in attaining the perfect plumage. Several were taken at Tucson about the middle of March, probably birds of the previous year, just finishing the prenuptial moult. They are evidently just acquiring the globular red crest of the adult, for they still have grayish feathers scattered over the crown, and most of the red ones have not yet attained half their growth; while the red of the lower parts is paler than in the adult male, irregularly blotched with whitish, and with dusky streaks on the breast. A breeding male taken near Fort Huachuca has many of the feathers of the crown tipped with dusky, and the red of the under parts blotched with white on the throat and abdomen. A male shot on August 9, was in the midst of the autumnal moult. Females differ principally in the amount and shade of the red of the abdomen and flanks, but one in my possession has a few salmon colored feathers, tipped with dusky, on the crown, and a few of the same color scattered over the breast. During August, families of young with the parents in attendance, were frequently seen, and at this time I found them more shy and difficult to approach than at any other. The males are, in my experience, singularly tame and unsuspecting for such bright, gaudy plumaged birds.

Otocoris alpestris adusta Dwight. Scorched Horned Lark.

A common summer resident, breeding everywhere on the plains below the Huachucas, right up to the base of the mountains. They arrive early, for on February 17, 1903, while driving from the train to the mountains, I saw a flock of about a dozen, and a few single birds; but it was nearly a month later before they were at all abundant. I saw young birds flying about the prairie by the middle of May and they became more and more abundant as the summer advanced. Toward the end of July and early in August, young and old gathered together in immense flocks, and were at this time very restless and difficult to approach, flying a long distance when disturbed. They seemed to depart for the south soon after, for on September 5, 1902, on a drive of over twenty miles over country in which they had bred in the greatest abundance, not a single Horned Lark was seen.

Horned Larks from this region are very uniform in coloration, the greatest variation being in the intensity of the yellow of the throat.

This is the only race of the Horned Lark that I have found here, though I have specimens taken from February to July, and some of the other sub-species might be expected to occur as migrants.

Cyanocitta stelleri diademata (Bonaparte). Long-crested Jay.

A common resident in the Huachucas, ascending to the pine forests of the higher altitudes during the breeding season, but generally distributed over the mountains for the rest of the year. Up to the middle of April they were most abundant in the oak regions and along the canyons from 5000 to 7000 feet, usually in flocks of a dozen or more; but after that time they gradually withdrew to the higher parts of the mountains to attend to their domestic duties. During the breeding season, up to the beginning of July, they were as quiet and inconspicuous as it is in the nature of a jay to be, but after the young left the nest they began to move down to a lower altitude, as noisy and as much of a nuisance as ever. They did not seem to be as gregarious at this time as in the early spring, for after the young had attained their growth the families seemed to break up, and each one to shift for himself to a great extent.

A young male just from the nest, and with the rectrices not yet half their length, has both the upper and lower parts, a uniform dark slate color, rather darker on the crest and paler on the rump and abdomen. There is some whitish on the chin, an indistinct whitish line over the eye, and the faintest suggestion of bluish white markings on the forehead. A juvenile female is essentially the same in coloration but lacks the whitish markings about the head. A young male, taken August 13, is beginning to lose the juvenile plumage, having patches of blue feathers on the sides and upper parts of the breast, the rump and lower tail coverts. Soon after the young leave the nest the adults begin to moult; specimens taken the middle of July being in a very worn state of plumage, with the webs of the tertials abraded so as to show hardly a trace of the transverse markings; but as yet hardly beginning to shed their feathers. An adult male taken August 15 has almost entirely renewed the rectrices and remiges as well as the plumage of the lower breast and abdomen; while the chin and throat are nearly bare, but little more than the shafts of the old feathers remaining, and a scattering growth of pin feathers just beginning to appear. The feathers of the crest are mostly new, but still ensheathed for about half their length; while the neck and anterior portion of the dorsum still retain the old worn plumage.

Specimens in fresh, unworn plumage have the upper parts of a decidedly bluish tinge, in marked contrast to the brown dorsum of late spring and summer birds.

Aphelocoma woodhousei (Baird). Woodhouse Jay.

This species is resident in the oak belt from the base of the mountains up to an altitude of 7500 feet, and is possibly fairly common in this region; but from the quiet, retiring disposition of the birds (a striking contrast to the rest of the family!) they are seldom seen, and it would be an easy matter for even an experienced collector to overlook them entirely. They frequent the steep brush-covered hillsides for the most part, seldom venturing down into the canyons, or into the open anywhere; and though their note can occasionally be heard, though they do not call very much either, a fleeting glimpse of a bird sneaking through the brush, close to the ground, is the most that is usually obtained. They are possibly more abundant on the west slope of the mountains than elsewhere; and they are generally rather local in their

distribution, favoring certain spots in certain canyons, where they can usually be found, to the exclusion of other places presenting apparently precisely similar conditions. On April 6, 1903, I scared several from some oaks at the base of the mountains, and with considerable difficulty secured one. Possibly these were migrating birds, as it was a place they did not usually frequent; and the one secured, a female in very worn plumage, was evidently not breeding, not even paired off in fact. On July 23, 1902, I saw a fully fledged juvenile at an altitude of about 7500 feet. I was not able to secure it, for as I was resting by the side of the trail it lit on a limb but a few feet away, and after a short inspection, left rather abruptly, nor did I see it again.

Aphelocoma sieberii arizonae Ridgway. Arizona Jay.

Noisy, fussy and quarrelsome as all the jays are, I know of no other species which possesses to such an eminent degree the quality of prying into all manner of things which do not concern it, and of making such a nuisance of itself in general, on the slightest provocation or on none at all, as the Arizona Jay does. They are very gregarious, and even during the breeding season may be seen travelling through the oaks in flocks of fifteen or twenty or more, ostensibly seeking for food, but also on the lookout for trouble, or any excitement which might turn up. A collector travelling through the woods gets his fair share of invectives, especially if he is examining nests, shrieked from the tree tops at a safe distance, to the accompaniment of bobbing heads and twitching tails; a Red-tail or Swainson Hawk sitting on some limb, furnishes a little excitement until he removes to some quieter locality; but the crowning joy of all is to find some wretched fox or wild cat quietly ensconced on some broad, sheltered, oak limb. In such a case the one that finds the unhappy victim takes care to let every jay within half a mile know from his outcry that there is some excitement on hand; and it is nothing unusual to see thirty or forty birds gathered about the object of their aversion, letting him know in no undecided terms just what their opinion of him is. It is a curious sight also to see a dozen or more gathered around some large snake, which they seem to fear nearly as much as they hate. On one occasion I had an excellent opportunity of watching about twenty Arizona Jays protesting at the presence of rather a large rattlesnake which was leisurely travelling down a dry watercourse which passed our camp. The jays seemed imbued with a wholesome fear of their wicked looking antagonist, and though they surrounded it, kept at a respectful distance; they were not as noisy as they often are, but kept uttering low querulous cries, quite different from their usual outbursts. Some of the boldest lit a short distance from the snake and strutted before it in a most curious fashion, head and body held bolt upright, and the tail pressed down on the ground until about a third of it was dragging. A bird we had in captivity for some time strutted about in the same comical fashion whenever it was angered and wished to show fight. On many occasions while out collecting, I have heard an outburst of jay's voices drawing nearer and nearer, until presently a Cooper, or Sharp-shinned Hawk, passed silently, like a ghost down the canyon; while behind it a straggling stream of jays trooped, anything but ghost-like, screaming and clamoring, to the great detriment of the hawk's hunting, who regarded them, I have no doubt, with precisely the same feeling that most of the deer hunters of this region have for the jays. Beside his vocal outbursts, the Arizona Jay makes when flying a curious fluttering noise with his wings, loud and distinct enough to be heard some little dis-

tance producing a curious effect; especially when, as often happens, a troop of them comes swooping down some steep hill side to the bottom of the canyon. Though wary and cunning to a marked degree, so that it is usually impossible to get within gun shot of them, still their curiosity leads to their destruction; for it is a simple matter for the collector, by hiding behind a bush and making any squeaking or hissing noise, to get all the specimens desired. In fact they fairly tumble over one another to find out what is going on; and I had not the slightest trouble in getting as many as I wished with a .32 caliber auxiliary, though otherwise it would have been difficult to secure any even with a twelve gauge.

Owing to the gregarious nature of the bird, it is difficult to say just when they pair off, for even when breeding they remain in flocks to some extent; but they seem generally to begin building their nests about the first of April, though I have taken specimens late in April which had not yet paired off. There seems to be no difference in the territory occupied by these jays at different seasons; I have never seen them above 7500, and they are most abundant below 6000 feet, breeding down quite to the base of the mountains. Though so extremely gregarious they do not seem to mix with any of the other species, and though I have seen both Woodhouse and Longcrested feeding in company with the Arizona, it was evident that they were merely drawn together in the search of food, and when disturbed the different species did not attempt to stick together. Acorns form a staple article of diet with these birds, and they can be seen everywhere under the oak trees searching for their favorite food, progressing by means of strong, easy, hops; and poking under sticks and stones, eating what they can, and hiding more for future use. On finding an acorn, a retreat is made to some near-by limb or boulder, where the prize is held between the two feet, and opened by a few well directed blows. The tame bird before mentioned, could in this manner demolish a lead pencil in a very few minutes, so that it can be imagined that an acorn presents no particular difficulties.

Soon after the first of June young birds begin to appear, and by the middle of the month are very much in evidence everywhere in the oak region; first sitting in the trees squalling to be fed, but very soon descending to the ground and rustling for themselves. The young are, in general appearance, very similar to the adults, but with the upper parts brownish with hardly a trace of blue, and the lower parts a dingy grayish brown; while the base of the bill is always light colored, to a varying extent. Sometimes the lower mandible is nearly all light colored with but a dusky spot near the tip, and sometimes the upper mandible also is light colored for nearly half its length. A considerable number of birds taken in the early spring, and some breeding birds, retain the light colored base to the lower mandible to a greater or less extent, but I think it is unquestionably a sign of immaturity; those seeming to be the oldest and most mature having the upper parts almost uniformly blue, the throat and upper breast, strongly tinged with the same color and the bill invariably black; while those with the lower mandible still retaining more or less of the light color have most of the wing coverts, tertials and dorsum, grayish brown, with hardly a trace of blue on the breast, and the blue of the head, rump, etc., not nearly as bright as in the more mature birds. In short the brightest colored birds of both sexes always have the bill black throughout, and those with the parti-colored bills are always the dullest in coloration. About the first of August young and old begin to moult together, and the grayish colored immatured birds

variously blotched with blue, may be seen all through the month. The adults renew their plumage entirely at this time, but the juveniles seem to retain the retrices and remiges acquired with the first plumage. I left before the moult was completed, but specimens taken in February and March, which I take to be birds of the previous year, have these feathers much more worn and abraded than have the more highly colored, older birds. Two old females taken the middle of August are in the midst of the autumnal moult, covered with pin feathers, and with many old feathers still scattered over the body.

Corvus corax sinuatus (Wagler). American Raven.

I have occasionally, but not often, seen large ravens in the higher parts of the mountains, their size, as well as the different note, serving to distinguish them from their smaller white-necked cousins of the plains. Possibly they breed in the mountains, but I know of no instance of a nest being found, or of any other evidence showing that they do so.

Corvus crytoleucus Couch. White-necked Raven.

On the plains and in the low lands generally in this region, the White-necked Raven, or "Crow," as it usually called here, is a most abundant resident; and though not a mountain bird, properly speaking, they frequently come up into the canyons, and on the lower foothills, usually after dead cattle. They are usually quite tame and unsuspecting, paying little or no attention to a man on horseback or a wagon passing by; but after being shot at a few times soon become very wary and hard to approach, and as they are usually out on the open prairie it is an easy matter for them to keep out of the way. On one occasion I approached a flock of thirty or forty busily engaged in catching grasshoppers, and as they began to leave long before I arrived within gunshot, I thought to try an experiment; wondering if an appeal to their curiosity might not be as successful as it usually was with the jays. Tying a stone in the corner of a red bandana handkerchief, I tossed it high into the air, and the result far exceeded my expectations; for though standing in plain sight, they came headlong to see what it was that had fluttered to the ground, and from that time on I had no difficulty in securing White-necked Ravens. When one or more were shot out of a flock the remainder did not fly off and alight again, but usually circled about, keeping in rather a compact body and ascending higher and higher; not descending to the ground for a considerable length of time, and usually a long ways off. On May 3, 1902, I heard a flock of Ravens making a great commotion in the air, and at first supposed them to be mobbing a hawk, but on their descending nearer to the ground and passing within about a hundred yards of where I was standing, I saw that what I had taken for a hawk was undoubtedly a White-necked Raven, but of a uniform pale brown color throughout. After a time the others appeared to become reconciled to their unique companion, and they all passed amicably away together. In the spring of 1903, I noticed a place on the plains some eight or ten miles from the mountains, where some species of bird was evidently roosting in large numbers. The plains are covered with brush at this point, mostly scrubby mesquite, and for a space some two hundred yards long and twenty-five or thirty yards wide the trees were almost destroyed by the use to which they had been put. The ground underneath was inches deep with excreta, and the trunks and branches of the trees were white with the same; while they were almost totally denuded of leaves, except at the extreme top where a little

green still lingered. In many cases the limbs were broken down by the weight of the birds. From the appearance of the excreta it was evidently a large species of bird that was roosting there, and as on a careful examination none but raven feathers could be found lying about, I came to the conclusion that it was they who were using the place, though I never found them roosting in such large numbers in any one place before.

At the neighboring schoolhouse the ravens were in the habit of gathering early in the afternoon, and cleaning up the scraps thrown aside from the children's lunches, strutting about the doorsteps like so many chickens. They are late in breeding though here in abundance all through the spring; and at nearly the end of May I have seen flocks of a hundred or more birds. I have found eggs the first week in June, but the bulk of them probably lay rather later. Their nests are scattered in considerable numbers along the washes leading from the mountains, being built indiscriminately in sycamores, walnuts, mesquites, or anything that will support the structure. From the nature of the trees they are in they are seldom over twenty or twenty-five above the ground, and I saw one nest in a little mesquite not over four feet from the ground. Early in August the young birds begin leaving the nests, and when they have attained their growth young and old gather together in enormous flocks. Juveniles taken at this time are much like the adults, but the plumage is of a dull black with none of the purplish gloss of the old birds, except on the wing and its coverts; the lanceolate throat feathers of the adult are also lacking, but the base of the feathers of the throat and neck is white, as in the old bird. The base of the lower mandible is light colored, (reddish in the dry skin) to a varying extent. Three young birds nearly full fledged, were taken from a nest August 16, 1902, and in spite of their protests, vocal and otherwise, taken to the camp and lodged in a large box. One soon died but the others did very well and returned to Los Angeles with us in September. About the first of October they commenced to moult; by the middle of the month they were very ragged looking, one being completely bald, but by the first of November they had renewed their entire plumage, except the rectrices and remiges. When we first secured them about the basal half of the lower mandible was light colored, but this area became more and more restricted, retreating toward the base of the bill, until by the time the moult was completed the bill was entirely black.

Nucifraga columbiana (Wilson). Clarke Nutcracker.

My personal experience with this species has been extremely limited. On June 21, 1902, a single bird passed over my head going in a southerly direction, at the extreme summit of the mountains. This is the only one I have seen, but I have some taken in the Huachucas by H. Kimball during April, 1895. I have been told that it is of quite common occurrence at times, but it is probably very irregular in its visits.

Cyanocephalus cyanocephalus (Wied). Pinon Jay.

On May 8, 1902, a large flock of Pinon Jays was seen late in the afternoon, flying about some oaks on a steep hillside, apparently looking for a place to roost. They were very restless and hard to approach, and it was with great difficulty that I secured three of them. Another flock was seen on May 15, but no more secured. The three I shot, a male and two females, were adult birds in rather worn plumage, and it is something of a puzzle just what they were doing here at this time, as they do not breed anywhere in the Huachucas. On August 22, 1902, I heard

a flock calling as they passed by, but was unable to catch sight of them on account of the thick trees in which I was standing. These are the only occasions on which I have met with the species in this region.

Molothrus ater obscurus (Gmelin). Dwarf Cowbird.

About the first of May, Cowbirds begin to appear in small numbers along the base of the mountains, but they never become at all abundant. Occasionally I have seen them as high as 5500 feet, but as a rule they do not venture far up into the mountains; remaining more at the base of the hills and in the mouths of the canyons. They are most numerous about the middle of May, and leave early in the summer; I saw none in the Huachucas after the middle of July.

Sturnella magna subspecies ?. Meadow Lark.

I have seen a few meadow larks in various places along the base of the Huachucas, usually in the tall grass in enclosed pastures, but they are anything but abundant, and those I saw were so wild as to be utterly unapproachable, so I was unable to secure a single specimen. I have seen them at various times through the spring and summer, so the few that are there undoubtedly breed in the locality. As I unfortunately failed to secure any it is, of course, impossible to say whether those I saw were *neglecta* or *hoopesi*, either or both of which may occur in this region.

Icterus parisorum Bonaparte. Scott Oriole.

A most abundant summer resident, principally frequenting the lower parts of the mountains, though I have occasionally seen it as high as 8000 feet. The earliest date at which I have seen any was March 31, 1903, when a male was secured; no more being seen until April 5, after which date they were abundant. Until nearly the end of April small flocks of from six to a dozen birds could be found along the canyons, usually below 5000 feet, feeding in the tops of the trees, where, in spite of the brilliant plumage and loud, ringing whistle of the male birds, they were anything but conspicuous. In feeding they sit quietly on the limbs prying and peering into such buds as are within reach, any necessary change of position being accomplished by clambering along the branches with hardly any fluttering of the wings; and as their plumage, though bright, harmonizes exceedingly well with the surrounding foliage, they could be easily overlooked were it not for the loud notes to which the males give utterance at frequent intervals. The first to arrive were the old, bright plumaged males, then a week or so later some females began to come in, and finally toward the end of April, what few flocks were seen were composed of females, and males presumably of the previous year, in every stage of plumage, most of them indistinguishable from the more highly colored females. The males in intermediate stages of plumage were very abundant for a time, and as specimens were secured in every phase from those absolutely indistinguishable from some females, up to the fully mature male, I should think it very probable that two years, at least, are required to obtain the perfect plumage. The dullest colored male I secured has the black restricted to the lores, cheeks, throat and upper breast, while the top of the head and sides of the neck are olive-green slightly specked with black. Some others are much like this one, but with the top and sides of the head more or less uniform, though dull, black. In all but one of these the tail is precisely as in the female, plain yellowish-olive, but little darker toward the tip; the exception has three rectrices bright yellow, the terminal third abruptly darker,

nearly as dark as in the adult male. These are not new feathers, for all the rectrices are equally worn and have the appearance of having been acquired the previous fall. Another specimen is a step nearer the mature plumage; the black of the head and breast is more extensive and more glossy; the back is dull black, and the feathers of this part as well as those of the nape and sides of the neck are edged with grayish and yellowish so as to produce a somewhat mottled effect. The pattern of coloration of the tail is exactly as in the adult male, but the colors much duller; and the under parts and the rump are dull greenish yellow but little brighter than the female. Still another is very nearly perfect; the wings and the tail have the bright, sharply defined colors of the adult, the throat and breast are glossy black, and while the yellow of the lower parts is not so bright as in my finest specimens, still it does not fall short of it very much. The upper parts, however, are duller; the head is black but with very little gloss, while from the nape the feathers of the back are broadly edged with olive-yellow and green. The rump, too, is dull greenish yellow but little brighter than in some females. Mr. Brewster, in his "Birds of the Cape Region of Lower California" dwells at some length of this same intermediate plumage of the male of *Icterus parisorum*, and seems to doubt the probability of its indicating immaturity; and though I have not the advantage of anything like as extensive a series as was at his disposal (I have no fall specimens but have examined in this connection thirty-five males taken by myself in the Huachuca Mountains and near Tucson from March to July) I can not help thinking that this is the explanation of the variation. It is not a well defined phase either of color or markings, for, as I have shown, there is a nicely graded series of changes from a dull plumage similar to the female, up to the brightest colored male. The fact that these dull colored males arrive in the spring later even than the female would also indicate their immaturity. The fact that they breed in this plumage is indisputable, but I should imagine that to merely prove that more than a year is required to obtain the full plumage. Most of the male birds I secured have more or less traces of grayish-white edgings to the feathers of the lower back, the only one without any trace of these markings being a specimen taken late in July, in very abraded plumage, and nearly ready to commence the moult. About a third of the females secured have the throat and upper breast, and sometimes the top of the head black, much as in the more imperfect males; one has a few scattered black spots on the breast, and the remainder have no trace of black on these parts.

The Scott Orioles seem to leave the Huachucas very soon after they are through breeding; I have taken none after July and though some may linger through August, I have no notes or recollections of seeing any at this time.

On May 25th, 1903, I secured a set of four fresh eggs near the mouth of one of the canyons, at an altitude of about 4500 feet. The nest was built under the sharp, overhanging leaves of a yucca, about four feet from the ground.

Icterus cucullatus nelsoni Ridgway. Arizona Hooded Oriole.

The Arizona Hooded Orioles hardly enter into the mountains at all, except in the migrations, when I have occasionally seen a few half a mile or so up the canyon; but in the washes below they are quite abundant throughout the summer. The earliest arrival noted was a male on April 4th, but they were not really abundant until after the middle of the month. Two males secured are in the dull plumage of the female, with

hardly any black on the throat. In one of these there are black feathers scattered throughout the area which is all black in the adult male; but the other has but two or three black spots on the throat. These two birds taken May 6th and 8th, 1903, were paired off and preparing to breed.

Icterus bullocki (Swainson). Bullock Oriole.

The only time at which I have seen Bullock Orioles at all abundant in the Huachuca Mountains was in August, 1902. About the middle of the month flocks of from ten to twenty, nearly all young birds, could be seen along the canyons up to an altitude of about 5500 feet. Most of these must have come in from other parts of the country, for I have never found them breeding at all abundantly in the mountains, being in fact, the rarest of the three species of orioles occurring there. They probably arrive, usually, about the first week in April along with the Hooded and Scott Orioles; in 1902 I saw one on April 3rd and they were fairly common by the middle of the month, but in 1903 the first I saw was on May 4th, after I had begun to think that they were not coming at all. They kept arriving in a leisurely fashion, and it was after the middle of May before I saw any beginning to pair off. They breed mostly along the washes in the same localities as the Hooded Oriole.

Scolecophagus cyanocephalus (Wagler). Brewer Blackbird.

I have seen this species about the yards and corrals at Fort Huachuca but hardly anywhere else. A solitary female was shot in a dry wash some three miles from the mountains on May 8, 1903.

Coccothraustes vespertinus montanus (Ridgway). Western Evening Grosbeak.

I am in doubt as to whether this species breeds in the Huachucas or not, for though I have never seen any at any time in the spring or early summer, on July 30, 1902, I came onto about half a dozen birds scattered through the pines at an altitude of about 9000 feet. An old male was observed feeding a fully fledged young, and secured, but the young one flew off and was not seen again. All that were seen were very wild, and after securing a second bird, a female, I was unable to approach within gunshot of any more. I am satisfied that these birds had not bred anywhere in the immediate vicinity of the place where they were at this time, for I had done a good deal of collecting there during the summer and would certainly have seen or heard them; but they might have done so in some more distant part of the range which I had not visited. The two secured were in badly worn plumage, the female having commenced to moult. On this occasion all the birds seen were scattered individuals, but on August 3rd a flock of six or eight were seen at a spot some five miles distant, and on August 30th a flock of over a dozen was seen near this latter place. These birds were all so wild that I was unable to get anywhere near them, and so none were secured.

Carpodacus cassinii Baird. Cassin Purple Finch.

A migrant, but probably of irregular occurrence. At various times during the spring of 1903, I saw flocks of Cassin Purple Finch in the pines from 9000 feet upward, specimens being secured from April 8th to May 11th; while during the previous year all that were seen were one or two stray birds about the middle of April in the canyons below 5000 feet. They were frequently found in company with the Pine Siskin, feeding sometimes on the ground and sometimes in the trees, the two species flying away together when disturbed. Several male birds secured, one

as late as May 11, were in the brown streaked plumage of the female, and several in this plumage were in full song.

Carpodacus mexicanus frontalis (Say). House Finch.

A summer resident, but in very limited numbers. I have not found it common anywhere in or near the mountains, nor have I seen any above 6000 and but very few above 5000 feet. The first seen in 1903, was a male which I secured on March 6; from then until the first of May two flocks of five or six each, and an occasional bird at long intervals, were all that were seen. In May a few were observed in pairs and they gradually became more numerous as the summer advanced. I have seen more in August than at any other time, but they never become abundant enough to call upon their heads the wrath of the fruit grower, as in California; and as several species of birds have done here, more or less deservedly. Though the House Finches I secured in the Huachucas and Santa Rita Mountains do not differ appreciably in size or proportions from Southern California birds, the difference of color in the males is certainly striking; the Arizona birds having the head and breast of a bright rose-pink, very different from the darker colored California birds. There is usually more or less red on the back, and frequently the whole crown is uniformly of this color, but there is considerable variation in these respects.

Loxia curvirostra stricklandi Ridgway. Mexican Crossbill.

My experience with this species was very limited, but from information received from Mr. O. W. Howard and others, I should judge that it occurred with fair regularity in the Huachucas as a fall migrant. The first I saw was a flock of four birds on August 30, 1902, at an elevation of about 9000 feet, and I saw others on several occasions before I left the mountains, about a week later. All that were seen were so wild as to be unapproachable, and it was by chance that I secured a single bird, a female, which happened to alight within gunshot of where I was standing. I have several males taken in the Huachuca Mountains by H. Kimball, apparently in fresh autumnal plumage, but unfortunately without data.

Astragalinus psaltria (Say). Arkansas Goldfinch.

I have never found this species at all common in the Huachuca Mountains. From March until nearly the end of June an occasional stray bird, wandering up into the canyons, was all that was seen; but after the summer rains they became a little more abundant, and small flocks were frequently seen feeding on weeds close to the ground; occasionally venturing up the canyons to an altitude of 5500 feet. All the males secured have more or less admixture of black in the auriculars, scapulars, etc., and one or two very dark colored ones were seen but not secured.

Spinus pinus (Wilson). Pine Siskin.

A very abundant migrant, appearing about the end of March and remaining in considerable numbers until the end of May. I saw one or two single birds in June, 1902, but doubt very much if any breed in the mountains, though from the early date at which they reappear in the fall, their breeding ground can not lie so very far to the northward. On August 7, 1902, I saw several flocks, and from that time on they were quite abundant; but though in the spring they were generally distributed throughout the mountains, in August all that were seen were in the pines

from 8500 feet upward. All the specimens taken at this time were adults in very worn plumage, several of them with the lower part discolored with reddish stain. The series of Siskins I secured in this region averages paler and grayer than Southern California birds; with the streaking of the lower parts restricted more to the sides and flanks, so that frequently the median line from the bill to the tail is almost immaculate. Occasionally the plumage above and below is suffused with greenish yellow to a considerable extent. Only once have I seen this species anywhere in the lowlands in this region, on April 17, 1902, when a few were seen in some willows along the San Pedro River, some twelve miles from the mountains.

Calcarius ornatus (Townsend). Chestnut-collared Longspur.

For a month or so in the spring Chestnut-collared Longspurs were quite abundant on the plains below the Huachucas, and could be seen almost anywhere, usually, in large flocks. The first observed were on March 14, when one or two small flocks were seen passing overhead. From that time on their numbers rapidly increased and the last week in March and the first in April they were at the height of their abundance. They began leaving about the middle of April, and by the end of the month were practically all gone, the last seen being a small flock, apparently all females, on May 3, 1902.

Rynchophanes mccowni (Lawrence). McCown Longspur.

Recorded by O. C. Poling as common at Fort Huachuca during February and March (Ornithologist and Oologist, Vol. 15, 1890, 71). I have never met with the species here myself.

Poocetes gramineus confinis Baird. Western Vesper Sparrow.

The Western Vesper Sparrow is quite a common migrant in the lowlands of this region, occurring as far up as the base of the mountains. Near the Huachucas it was rather locally distributed, clinging in small flocks to the same favorite localities as long as it remained in this region. The earliest date at which any were seen was March 14, and they disappeared soon after the middle of April.

Ammodramus sandwichensis alaudinus (Bonaparte). Western Savanna Sparrow.

Very rare. On March 29, 1902, I shot one on the plains a few miles from the mountains, moulting so badly that I did not save it. This is the only one I have seen in this region.

Coturniculus bairdi (Audubon). Baird Sparrow.

This species proved to be exceedingly abundant in the spring, on all parts of the plain below the Huachucas; even coming up into the mouths of the canyons in places where the ground was open and free from trees. Possibly a few remain through the winter as I took a specimen on February 17, 1903; but no more were seen until nearly the middle of March, when they became quite abundant, remaining so until the end of April, when they rather abruptly disappeared, May 3, being the latest date on which any were seen. I found them difficult to shoot at all times, running through the grass and seldom taking wing when it could be avoided; and their colors harmonize so well with the surroundings that they were by no means easy to catch sight of. None were observed singing at any time, nor were any seen in pairs; they were not at all gregarious, and though abundant, nearly all that were seen were

single birds. If more than one was seen at a time they made no effort to keep together when startled, but usually went in different directions. Specimens taken the third week in April were undergoing a slight moult, usually restricted to the chin, throat and upper breast. In such as have completed this change, the plumage of these parts is of a decidedly more buffy hue than in those taken earlier in the season, in which it is generally almost pure white. Aside from this, almost the only variation in the specimens collected is in the markings of the pileum; in some the dark streakings being restricted almost entirely to the sides, leaving a broad, well defined, median line of buff, while others have the whole crown almost equally streaked with dusky.

Coturniculus savannarum bimaculatus (Swainson). Western Grasshopper Sparrow.

A rare migrant. In 1902 I secured a female on March 31st, and a pair on April 4th; the following year a male was taken on April 5th. These were all shot in a field at the base of the mountains, about 4500 feet, altitude, and are all that I have seen in this region.

Chondestes grammacus strigatus (Swainson). Western Lark Sparrow.

This species proved to be an exceedingly abundant summer resident in the washes below the mountains, arriving about the middle of April. Though so common along the base of the mountains, I never met with any above the very entrance of the canyons.

Zonotrichia leucophrys (Forster). White-crowned Sparrow.

I found this species, together with *gambeli*, very abundant along the San Pedro River during the latter part of March and throughout April, but they appeared in the Huachuclas in but very limited numbers. The first seen in the mountains were secured on April 7th, and a few others were observed at various times up to May 13th, when a pair of birds were shot, none being detected above 5000 feet. Most of the specimens taken early in May show more or less traces of moult on the head, throat, and dorsum.

Zonotrichia leucophrys gambeli (Nuttall). Intermediate Sparrow.

Very rare in the Huachuca Mountains, though, as I before indicated, more abundant along the valley of the San Pedro. Even there, however, it is outnumbered by true *leucophrys* two to one, and the only positive record I have of its occurrence in the mountains is one immature female taken March 24, 1903.

Spizella socialis arizonae Coues. Western Chipping Sparrow.

This species probably remains in the Huachuclas through the winter, for on my arrival in the mountains on February 17, 1903, I found large flocks of Chipping Sparrows everywhere in the oak region, and they remained in the greatest abundance all spring. Though not breeding in this region they remain very late, being abundant up to the first of May; and I saw some as late as May 15. In 1902 they appeared in the fall about the first of August, and were soon quite abundant, though not as much so as in the spring. All that were seen at this time were adults in very worn plumage, many of them ragged and moulting. None were seen at a higher altitude than 5000 feet.

Spizella breweri Cassin. Brewer Sparrow.

Occurring in company with the Chipping Sparrow in the spring, but in much smaller numbers, and leaving at rather an earlier date. I saw none in August or September up to the time I left the mountains.

Spizella atrogularis (Cabanis). Black-chinned Sparrow.

On April 4, 1902, I heard a Black-chinned Sparrow singing on a steep hill-side near our camp. The bird was not seen, but the loud characteristic song was kept up for some time, and I know of no other species in this region with a note at all like it. Some ten days previous to this I saw and heard several in the foothills of the Santa Catalina Mountains, near Tucson, so I do not think I could have been mistaken. This is the only occasion on which I have had any indications of the presence of this species in the Huachucas, and it must be of rare occurrence there.

Junco hyemalis (Linnaeus). Slate-colored Junco.

Occurs in limited numbers in the winter in company with *caniceps*, *mearnsi* and *thurberi*. I took but four specimens all told; two males taken on February 18 and 24, respectively, and a male and female taken on March 24, all in 1903. Possibly three or four others were seen; none being observed at a higher altitude than 5500 feet.

Junco hyemalis shufeldti Coale. Shufeldt Junco.

I have three Juncos from this region, two males and a female, which Mr. Ridgway has identified as belonging to this race. These were all taken at a low altitude in flocks composed of the various species of *junco* wintering in the mountains, and though these were all the specimens secured they may have been fairly abundant, being associated with *thurberi* as they were; for the two races are by no means easy to differentiate, even where specimens are secured, and in the field it is practically impossible to do so.

Junco hyemalis thurberi Anthony. Thurber Junco.

As this bird is usually listed as a mere straggler in Arizona, I was surprised at finding it as numerous as it was in the Huachuca Mountains during February and March, 1903. At this time it was probably the most abundant species of *junco* in the mountains, being particularly numerous in the oak regions below 5500 feet, and occurring in limited numbers up to the highest parts of the range. On February 21, I saw a few on the divide of the mountain at about 9000 feet. After the middle of March they began to disappear, and after the first of April but an occasional small bunch of half a dozen or so was seen, the last observed being on April 19. Specimens secured differ in no wise from birds in my collection taken in various parts of Southern California.

Junco mearnsi Ridgway. Pink-sided Junco.

I found this species quite common during February and March, 1903, occurring in the large flocks composed of the various species of juncos that were in the mountains at the time; but restricted almost entirely to the lowest part of the range, no specimens of *mearnsi* being taken above 5500 feet. Though not as abundant as some of the other species, it was fairly numerous up to the third week in March, all that were seen after that being an occasional stray bird, usually in a small flock of *caniceps*, which lingers in this region longer than any of the other non-resident species of juncos. The last Pink-sided Junco seen was a female shot on April 15. In the specimens secured there is considerable variation, particularly in the females, in the shade of pink of the sides, and the area covered by it; in some this color extending far up on the sides of the neck, or meeting across the breast.

Junco caniceps (Woodhouse). Gray-headed Junco.

A winter resident, very abundant in the oak regions, and to a lesser extent in the higher parts of the mountains, remaining until about the end of April. In February and the early part of March it was outnumbered by *thurberi*, but as that species decreased in numbers *caniceps* became more in evidence, though probably not really increasing in numbers. Up to the middle of April the Gray-headed Junco was still fairly abundant, though in smaller flocks than before, and often found at a considerably higher altitude than that frequented earlier in the season. I took several specimens as high as 9000 feet, and they may have been more numerous than I supposed, for those secured were usually in company with the Arizona Junco (*J. p. palliatus*) and it is not easy to distinguish between the two species in life. I took specimens on various occasions toward the end of April, and have one shot as late as May 2 (1896). A small percentage of specimens of both sexes have more or less chestnut on the crown, of the same color as the back, usually in the shape of a few disconnected spots but occasionally covering nearly the whole of the crown. There is also considerable variation in the color of the tertials, which, usually edged with pale gray or having the whole outer web of that color, are in about a third of the specimens collected, broadly edged with pale brown.

Four specimens were secured which are probably hybrids between *caniceps* and *mearnsi* (*J. auncetens* of Professor Baird, and *J. ridgwayi* of Dr. Mearns). These were all taken in March, 1903, two males the 7th and 12th, and two females on the 13th and 14th, respectively. Three of these, a male and two females, resemble each other very closely, and are practically like average examples of *caniceps* but with more or less pink on the sides and flanks. The fourth specimen, a male taken March 12, is quite different from these and has apparently just undergone a complete moult, for there are pin feathers scattered over the body, three of the rectrices have not yet attained their full length, and over the entire plumage there is a gloss and bloom only present in newly acquired plumage. The head and throat are darker than is the case in either *caniceps* or *mearnsi*, there is considerable pink on the sides and flanks, and the lower parts from the breast to the anal region are dirty buff, the only pure white feathers being the under tail coverts. The interscapular region is dark chestnut obscured throughout by a dusky wash; the greater wing coverts are reddish brown, and the outer web of the tertials is broadly margined with the same.

All four of these birds in general appearance resemble *caniceps* much more closely than they do *mearnsi*.

Junco phaenotus palliatus Ridgway. Arizona Junco.

An abundant resident, and one with which, apparently, the seasons make but little difference, for not only does it refrain from going further south at the advent of cold weather, but I could discern little evidence of any vertical migration either. During February and March I found the non-resident species of juncos together in large flocks throughout the oak region, but I never once took a specimen of *palliatus* in any of these mixed gatherings. Even in the coldest weather I never saw one below 5500 feet, and they were most abundant above 7500 feet; usually in small bunches of six or eight, occasionally with a stray *caniceps* included in the flock, but usually by themselves. They are at all times, winter and summer, most abundant along the divide of the mountains, from 8500 to 10,000 feet, altitude, and the only appreciable difference in their

distribution at the different seasons, is that up to the end of March they are fairly abundant between 5500 and 6500 feet, while but very few breed at so low an altitude. They begin to pair off about the first week in April; on April 25 I shot a female which had laid part of its set, while the latest nest I have seen was one containing three badly incubated eggs, on July 30. The nest is usually built upon the ground, under a bunch of grass, a log, or, as I have occasionally found it, under a flat stone; but this is not invariably the case, as I have known one or two instances of its being placed in some thick shrubbery, a drooping pine limb, or a young fir, a foot or two above the ground. The Arizona Junco is much more arboreal in its habits in general than any other of the genus that I have come in contact with, and on several occasions specimens were shot from the topmost branches of the pines, fluttering about like warblers, for which I mistook them, and from their actions apparently in search of insect food. In the spring the male bird frequently ascends high in the tree tops, and sits there motionless, uttering his short song at frequent intervals; and two or more may often be seen pursuing one another through the trees, seldom descending to the ground at such times. About the middle of June the young birds in the spotted plumage begin to appear, and all through July they are quite numerous, often two or more broods running together, accompanied by the various parents. The young birds are at this time heavily streaked above and below, though less on the throat and abdomen than elsewhere, the bill is uniformly black, and the iris brown. The dark streakings are confined principally to the tips of the feathers, and, as the soft juvenile plumage wears away very rapidly, those birds which have nearly attained their full size have these markings much more faintly indicated than those which have just left the nest. Specimens taken late in July, nearly ready to discard the juvenile plumage, have the dorsum nearly uniform red, as in the adults though much paler; and the dark streaks of the lower parts restricted almost entirely to the upper breast. As the bird becomes older the iris gets paler, changing from brown to whitish, then to pale yellow, and finally, about the time the juvenile plumage is shed, to the bright yellow of the adult bird. At the same time the lower mandible is gradually becoming paler than the upper, the change in this respect as well as in the iris, being completed about the time the adult plumage is assumed. The juvenile plumage is shed in August, at the same time that the adults are undergoing their post-nuptial moult; specimens secured on September 2 being hardly distinguishable from adults, and with but a few faint spots remaining on the breast, sides of the head, and scapulars. The scapulars seem to retain the juvenile markings the longest, and I have one specimen, a female, presumably of the previous year, taken on April 4, in which not only the scapulars, but the greater wing coverts also, are tipped with dusky, and there are one or two faint spots on the red of the dorsum as well. An adult male taken September 2, has not quite completed the moult, some of the rectrices having not yet acquired their growth; and is practically indistinguishable from specimens taken in February, the principal difference being in the softer more blended appearance of the plumage.

In the specimens collected there is some difference, mainly seasonal, in the intensity of the red of the back, those taken in February and March, having the color obscured by grayish edgings to the feathers. In a number of cases there is more or less admixture of grayish in the red of the scapulars and greater wing coverts, these parts occasionally being almost entirely gray. In the tertials also there is considerable

variation, from those in which the outer web is gray with hardly a trace of red, through every stage to those in which they, together with the scapulars and greater coverts, are uniform with the back. All the specimens secured have the bright yellow iris of *palliatu*s, and I took none but what are referable to that race rather than *dorsalis*, though the latter might be expected to occur in this region in the winter. Intergradation between the two races might be indicated by the varying extent of the red areas of the upper parts in the specimens of *palliatu*s secured.

In just one specimen, a female, is there any indication of red on the crown, but whereas in *caniceps*, where it is fairly common, such a mark usually takes the form of a more or less connected patch, in this case it is a well defined line over each eye.

Amphispiza bilineata deserticola Ridgway. Desert Sparrow.

Breeds in the greatest abundance in the valley of the San Pedro River, where it is probably resident the year through. It appears in limited numbers in the foothills of the Huachucas for a short time in the spring, from the end of March, to about the end of April; and though I have seen none during the breeding season, toward the end of July small flocks were frequently met with, usually composed of a single family; the two parent birds and three or four juveniles.

Aimophila cassini (Woodhouse). Cassin Sparrow.

When I reached the Huachuca Mountains at the end of March, 1902, I found this species scattered in small numbers along the base of the mountains, and took several specimens during the first week in April. At the middle of April it was fairly abundant along the San Pedro River, being generally found in the tall grass; and in June, O. W. Howard found several nests in the valley, some ten miles from the mountains, that probably belong to this species, though none were positively identified. About the middle of March of the same year I took several specimens in the foothills of the Santa Catalina Mountains, near Tucson.

It seems rather irregular in its occurrence, for in 1903, there were none to be found in places where it was fairly abundant the previous year; and the only one seen was a single bird at the base of the Huachucas, on May 14th.

Aimophila ruficeps scotti (Sennett).. Scott Sparrow.

This species proved to be an abundant resident in the Huachucas, particularly favoring those parts of the foothills which, having but little brush, are covered with tall grass and a scattering growth of live-oaks. Though most abundant in the foothills below five thousand feet, they seemed affected more by environment than altitude, and were found throughout the mountains, in all suitable places, quite up to the divide of the range. They were almost invariably seen in pairs, occasionally but rarely, two pair being together. Specimens collected vary considerably in color. This variation is seasonal to a great extent, for birds taken in February and March have the colors of the upper parts obscured by the grayish edgings to the feathers; but aside from this, and irrespective of sex, some are much paler than others. It is only those taken late in the summer, in July and August, in very abraded plumage, that have the rufous of the crown clearly defined and unmixed with other colors.

Melospiza lincolni (Audubon). Lincoln Sparrow.

This species is usually fairly abundant in the spring, frequenting damp shady places in the canyons up to an altitude of 6200 feet. In 1902 I found it in the mountains when I arrived at the end of March, remaining until about the middle of May; but in 1903 the first did not arrive until May 9, and not more than half a dozen were seen altogether.

Pipilo maculatus megalonyx (Baird). Spurred Towhee.

A common resident in the higher parts of the mountains, descending, along the canyons, as low as 5500 feet, but most abundant from 7500 feet upward. During the breeding season a more restricted area is occupied than at other times; for after the young birds begin to appear, about the middle of July, they scatter over the mountains, and are more abundant in the lower canyons than before, but at all times their numbers are greater along the divide of the mountains, in the pines, than elsewhere.

Pipilo fuscus mesoleucus (Baird). Canyon Towhee.

Occurs in limited numbers along the base of the mountains, favoring the more barren foothill region rather than the canyons, where it is frequently seen in company with *Aimophila ruficeps scotti*. It is far more abundant along the San Pedro River than I have found it anywhere in the Huachuclas.

Oreospiza chlorura (Townsend). Green-tailed Towhee.

A common migrant, frequenting the lower canyons up to an altitude of about 6000 feet. In 1902 the earliest arrival noted in the Huachuclas was on April 2, though I saw some near Tucson, in the Santa Catalina Mountains at the middle of March. They were fairly abundant throughout April, and up to the middle of May; reappearing in the fall on September 1st. In 1903 the Green-tailed Towhee were very late in arriving, the first seen being on May 6th; the last noted, on May 22nd. At this time all that were seen were in the washes issuing from the canyons, specimens being taken a mile or more from the mountains. A male bird, presumably of the previous year, taken on May 8, 1903, has hardly a trace of the rufous crown, and is generally of a duller color and with the markings less sharply defined than in the fully adult bird. An immature female, taken September 1, 1902, has the rufous crown obscured by dusky tips to the feathers, and the whole of the upper parts suffused with a brownish wash.

Zamelodia ludoviciana (Linnaeus). Rose-breasted Grosbeak.

I have in my possession a male Rose-breasted Grosbeak collected by R. D. Lusk in the Huachuca Mountains, on June 29, 1894. From the date at which it was taken it would almost seem as if it was a breeding bird, though I doubt very much that that was the case. This species is undoubtedly of extremely rare occurrence in this region; I have never met with it myself nor do I know of any other specimens secured in the mountains.

Zamelodia melanocephala (Swainson). Black-headed Grosbeak.

This species is one of the most abundant and conspicuous of the breeding birds of this region, and during the summer months the loud, ringing song of the male bird can be heard in all parts of the mountains. They arrive in April, in 1902 the first being seen on April 20th, and the following year on April 28th; and though the first arrivals soon set to

work at their housekeeping, migrating birds were taken up to the end of May. It is rather singular that though in California this species is most abundant in the willow regions of the low lands, here it is pre-eminently a bird of the higher mountains, and, even during the migrations, of very rare occurrence in the lower valleys. During the summer it is most abundant in the highest parts of the mountains, seldom breeding below 6000 feet; but soon after the young leave the nest a downward movement is begun, and up to the middle of August these Grosbeaks fairly swarm in some of the lower canyons, young and old gathering together in enormous, though loose and straggling flocks. They have a bad name with the fruit growers of this region, who destroy them without mercy, and there is no doubt that they are very destructive to the fruit, descending on the orchards in large flocks, and ruining much besides what they eat. A series of eighteen male birds from the Huachuca Mountains shows considerable variation in color and markings, but the most highly plumaged specimens have the lower parts darker than any California birds in my possession, with rather more black on the chin and throat. A well defined tawny postocular stripe is present in many instances, and even in most perfectly marked early spring specimens it is usually indicated by rusty tips to the feathers of those parts which are lost by abrasion at a later date; so that it is really only late summer specimens in worn plumage that have the head solid black without any appearance of these markings. One bird, otherwise as brightly colored and highly marked as any collected, has the black of the head divided by a broad, well defined median stripe reaching quite to the bill, while the postocular stripe is continued, narrowly but sharply defined, over the eye to the nostril. Several specimens taken during the latter part of May were changing from the dull, immature plumage to that of the adult; and such birds are variously marked, streaked more or less underneath, with the bright new black and white wing and tail feathers showing conspicuously against the old dull colored ones, and blotches of old feathers showing on various parts of the head and body. This change seems to be accomplished very gradually, however, and I saw none which appeared very ragged as a result of it. It is noteworthy that in such specimens the postocular stripe is always present, more or less conspicuously, so that it is possible that such a mark is to some extent a mark of immaturity.

The male birds had nearly all left by the second week in August; and such as were taken at this time had not yet commenced to moult their summer plumage, though in many instances the white and tawney edges to the feathers of the dorsum, as well as the scapulars and tertials, had worn off to such an extent as to leave those parts almost uniformly black in appearance. By the middle of August none but females and immature birds remained, and these gradually disappeared, until by the end of the month there were very few to be seen of any age or sex.

Guiraca caerulea lazula (Lesson). Western Blue Grosbeak.

A common summer resident along the San Pedro River, but of rare occurrence in the Huachucas. Several times during August, 1902, I thought I heard the note of the Blue Grosbeak in some of the lower canyons but never secured any. I have seen an adult male taken by R. D. Lusk in the Huachuca Mountains, August 19, 1894.

Cyanospiza amoena (Say). Lazuli Bunting.

During the spring migration this species appears in the Huachucas, not in great numbers, but still in tolerable abundance; but its stay is an

exceedingly short one, more so than any other of the migrating species. In 1903 the first noted was on April 14th; for about a week they were quite plentiful, and then abruptly disappeared. In 1902 I observed a few along the San Pedro River on April 17th; a day or two later they began to appear in the mountains, and by the third week in April had all gone on. In 1896 I saw a very few during the last week in April. They reappear at a very early date, for one was seen on July 22, 1902, and their numbers increased rapidly throughout August. Though at all times more abundant in fairly open ground in the lower parts of the mountains than elsewhere, I have occasionally seen them far up the canyons; and, particularly in the spring, have known them to ascend to as high an altitude as 8000 feet. At such times they were generally in mixed flocks of migrating warblers, vireos, etc.; and fed with them in the tree tops rather than on or near the ground, as they usually do. In the fall the old males were the first to appear, the females and young following later. An adult male taken August 21st has renewed many of the feathers of the head and back, but for the rest it is clothed almost entirely in the old worn breeding plumage. An adult female taken August 11th has almost entirely renewed the plumage of the upper parts, and has many new feathers scattered over the throat, breast and sides.

Cyanospiza ciris (Linnaeus). Painted Bunting.

On July 12, 1902, I secured a male bird of this species, which, on dissection appeared to be an adult, though lacking entirely the bright colors of the old male. The plumage is old and abraded, the upper parts almost uniform dull greenish, while the lower parts are yellowish with a tinge of green on the throat and breast. This bird was taken near the mouth of a canyon, feeding on the ground under some live-oaks, and another, apparently a facsimile of the one secured, was seen close by. Several times during the month of August I imagined I saw others in the same dull plumage in the flocks of *amoena* which were abundant at the time, but no more were secured; and it is difficult, if not impossible, to distinguish with any degree of certainty, the immature of the two species while flying about.

Calamospiza melanocorys Stejneger. Lark Bunting.

The only place in this region where I have found the Lark Bunting really abundant is below Fort Huachuca along the edge of the mesa rising from the Barbacomari River. I have occasionally seen scattered birds along the base of the Huachucas elsewhere, though not many, but here during the migrations they can usually be found in considerable numbers. I saw several small flocks here on April 22, 1902, and secured a male which had nearly acquired the nuptial plumage. The lower parts are nearly all black, and the plumage of the wings and tail has been entirely renewed, but a good many old feathers remain, scattered over the upper parts, and a single pure white one shows conspicuously against the black throat. On May 16, 1902, I saw a large flock and several single birds on the Empire Ranch, some twenty-five miles to the northward of the Huachucas, the latest that I have seen any in this region in the spring. The first to appear in the fall were three adult males which I saw at the base of the mountains on August 10th; while on September 5th, while driving to the railroad, flocks of hundreds were seen on the plains below Fort Huachuca, all moving in a southerly direction. In these flocks none were seen in the black and white plumage of the adult male, so that either the old males had gone on ahead, or had already moulted their summer plumage.

Piranga ludoviciana (Wilson). Western Tanager.

Occasionally during the summer months I have seen Western Tanagers in some of the higher parts of the mountains, so they probably breed in the Huachucas, though in very limited numbers. They are fairly common during the spring migration, the first noted being on April 26, but are more abundant in the lower oak regions than elsewhere, going in flocks of ten or twelve, often in company with the Black-headed Grosbeaks. Such flocks were seen throughout May and early in June, after which they disappeared, except for the stragglers before mentioned, to reappear about the third week in July, rapidly increasing in numbers from then on. Throughout August they remained in large flocks composed mostly of young birds and females, with but a sprinkling of old males, and their favorite food at this time seemed to be the wild cherries, of which there is an abundance in the mountains.

Piranga hepatica Swainson. Hepatic Tanager.

A fairly common summer resident, generally distributed over the mountains during the migration, but in the breeding season restricted more to the canyons between 5000 and 7500 feet. In 1902 the first arrival was noted on April 11th, and the following year on April 16th; about the middle of May they were quite abundant in the higher pine regions, going in flocks of eight or ten, feeding in the tree tops and but seldom descending to the ground. The male birds collected vary but little in shade or intensity of the red coloration, except that late summer birds are paler and duller through abrasion of the plumage, but there is hardly one that does not show some greenish-yellow feathers somewhere in the plumage, sometimes but a scattered feather or two, and sometimes a conspicuous patch of that color. Two male birds secured are strikingly different from the others in that in general appearance they strongly resemble the female, though of a larger size. Possibly this is an immature stage, but it seems to be of rare occurrence; and one of these two birds was taken on April 16th, the first of the species to arrive for the year, which is rather unusual for a young bird; while the other, shot on June 2, 1896, was a breeding bird. The first mentioned is, in coloration, a facsimile of the average female, but the other differs in having chin, throat, and jugulum, bright orange, with some of the same color on the anterior portion of the crown. Females vary, principally on the lower parts, from rather bright greenish-yellow to dark olive-green; while one from the Santa Rita Mountains has the entire under parts, including the lower tail coverts, and excluding the flanks, bright orange-buff.

A young bird taken August 26, 1902, with sex undetermined but probably a male, for it is larger than the average female, is still in the streaked juvenile plumage. Chin, throat, breast and abdomen are heavily streaked with dusky, while the crown, dorsum, rump and lower tail coverts are more faintly marked with the same. A few greenish-yellow feathers are beginning to appear on various parts of the body.

Piranga rubra cooperi Ridgway. Cooper Tanager.

This species proved to be of very rare occurrence in the mountains, during the migration; though it is a fairly common summer resident along the San Pedro River. I have met with it in the Huachucas on but three occasions; a male bird, secured on May 6, 1902, at an altitude of 5700 feet, which is probably as high an elevation as is ever reached by this species; and two females taken near the base of the mountains on May 3, 1902, and May 8, 1903, respectively.

Petrochelidon lunifrons (Say). Cliff Swallow.

At various times during the month of April and May I have seen small flocks of Cliff Swallows passing overhead, usually flying at a considerable height, but I know of no place in this region where the species breeds. As no specimens were secured it is, of course, possible that *P. melanogastra* was also seen, and it may be that all that were observed belonged to that species rather than *lunifrons*.

Hirundo erythrogastra Boddaert. Barn Swallow.

Though the Barn Swallow is an exceedingly common summer resident along the San Pedro River and in the low lands generally in this region, I have seen it along the base of the Huachucas on but very few occasions during the migration.

Tachycineta thalassina lepida (Mearns). Northern Violet-green Swallow.

A fairly abundant summer resident in the higher parts of the range, breeding from 7500 feet upward, but most numerous along the divide of the mountain. The first arrivals were noted on March 12, 1903, a small flock flying about some live oaks at the mouth of a canyon, but they were not at all abundant until about a month later. Toward the end of July, 1902, after the young were out of the nest, they moved down into the lower parts of the mountains, where young and old were seen together in large flocks; the young birds being, in many cases, still fed by their parents.

Ampelis cedrorum (Vieillot). Cedar Waxwing.

Probably of very irregular occurrence. None were seen either in 1896 or 1903, but in the spring of 1902 they were fairly abundant in the lower canyons up to an altitude of 6000 feet. They were seen throughout the month of April, the last observed being a small flock on May 6th.

Phainopepla nitens (Swainson). Phainopepla.

Though this species is an exceedingly abundant summer resident in the lower valleys of this region, it does not, as far as I am aware, breed anywhere in the Huachuca Mountains; but appears in the spring, during the migration, in limited numbers in the foothills. About the end of July, 1902, a movement began from the lower valleys up into the mountains, and during August the Phainopeplas were most numerous throughout the oak region, up to about 5000 feet. At this time they were in loose straggling flocks of from six to a dozen birds, young and old together, and were generally seen sitting in the tree tops and feeding for the most part, as flycatchers.

Lanius ludovicianus excubitorides (Swainson). White-rumped Shrike.

A common resident throughout the brush-covered valleys and lowlands generally, breeding occasionally quite up to the base of the mountains. I found it most abundant in the Huachucas, though even then only in the lowest parts of the foothill region, toward the end of the summer from the last week in July through the month of August; most of the birds seen being young of the year. The shrikes of this region seem to be rather late in their breeding, compared with the California birds.

On March 21, 1903, I saw eight or ten birds in one place near the San Pedro River, evidently pairing off; the males sitting on the tree tops singing, and at frequent intervals fighting among themselves or

pursuing the females. On April 17, 1902, several nests containing from one to three eggs were examined, and the first containing a full set was one containing six eggs, found on April 22nd. An immature bird taken on July 26th, is still to a great extent in the grayish brown vermiculated juvenile plumage, but another, shot on August 6th, is hardly distinguishable from the adult. An adult male taken on August 17th has almost completed the moult, the only old feathers remaining being a few in the wings and tail. It is appreciably darker than the spring specimens.

Vireo olivaceus (Linnaeus). Red-eyed Vireo.

I have an adult male of this species taken in the Huachuca Mountains by R. D. Lusk on May 20, 1895. It is probably a mere straggler to this region.

Vireo gilvus swainsoni (Baird). Western Warbling Vireo.

A very common migrant; but though I thought it possible that a few might remain to breed in these mountains, I was unable to detect any during the breeding season, and they probably go further north; though from the early date at which they reappeared in the fall their breeding ground cannot be at any great distance to the northward. The earliest date at which I have seen this species in the spring was April 21, 1902; the following year the first seen was on April 30th. They were found in all parts of the mountains, though probably most abundant in the oak region, below 6000 feet, and remained in tolerable abundance until about the third week in May. They reappeared before the end of July; I saw several on July 27th, and, though not as abundant as in the spring, they were to be found all through the oak region during the month of August.

Vireo solitarius cassini (Xantus). Cassin Vireo.

A common migrant, found throughout the mountains. The earliest arrival noted in the spring was on April 9th, and the last seen on May 22nd. On September 3, 1902, I saw several and secured two, a male and a female, in newly acquired autumnal plumage.

Vireo solitarius plumbeus (Coues). Plumbeous Vireo.

During the spring migration the Plumbeous Vireo is quite abundant in all parts of the mountains; and at this time I took several specimens from the base of the mountains up to the top of the highest peaks.

During the summer it is not so numerous, though still a fairly common bird, and the breeding birds occupy a more restricted area, being found along the canyons, from 6000 to 8000 feet. In 1902, the first seen was on May 6th; in 1903, one was secured on May 1st, and on May 5th, one was seen at work at a nest which was already well started. Specimens collected show considerable variation in color, and though I took none that could be confused with *cassini*, still some have a considerable admixture of greenish-yellow on the sides and flanks; though the majority have those parts plain, dark plumbeous. A female shot on May 11th, has a number of old, worn feathers scattered over the crown and back as though it were just completing a moult.

Vireo huttoni stephensi Brewster. Stephens Vireo.

Possibly this species remains in the Huachuca Mountains throughout the winter, but I am inclined to doubt it, and if it does it must be in very limited numbers. I secured a single bird as early as February 20th, but no more were seen until March 2nd, when another was taken;

about the middle of March they became more abundant, though not a common bird at any time, and soon after the middle of the month were already in pairs. Upon their first arrival they were found mostly in the live oaks near the base of the mountains, but the breeding range seems to lie between 5000 and 7500 feet. During the breeding season these vireos were very quiet and inconspicuous, and were most easily overlooked; but after the middle of August they began to appear in considerable numbers, and were more abundant at this time than at any other. Specimens taken the middle of August are in the midst of the moult, but some secured the first week in September have nearly completed the change. Birds taken at this time are generally rather darker and more olivaceous than spring specimens, with more greenish-yellow on the edges of the wing and tail feathers. Aside from these seasonal differences the series of specimens I secured here shows very little variation in color, and I took none which approach *huttoni* very closely; but I have a male specimen of *huttoni* taken at Los Angeles on December 6th, 1898, which is almost indistinguishable from autumnal examples of *stephensi*; being quite as pale in coloration, but having rather more greenish-yellow streakings on the sides and flanks than is the case with that race. The bill is also of the larger size which distinguishes the coast race.

Vireo pusillus Coues. Least Vireo.

This species must be of very rare occurrence in these mountains, for the only occasion on which I met with it was on April 8, 1902, when a single bird was seen, but not secured, in a live-oak at the base of the mountains. Along the San Pedro River it is a common migrant, and breeds fairly abundantly in suitable places.

Helminthophila luciae (Cooper). Lucy Warbler.

From April 8th to 12th, 1902, I found this species in very limited numbers, in company with *virginiae*, *gutturialis* and *lutescens*, in some live-oaks at the mouth of the canyon I was camped in. This is the only occasion on which I have found it in the Huachucas, though in the lower valleys of this region it is an exceedingly abundant summer resident. Along the San Pedro River it breeds in great abundance, and O. W. Howard and F. C. Willard have both informed me that in this region the nest is frequently placed in some hole or depression in the steep sides of the "washes" and "draws" which intersect the country draining to the river.

Helminthophila virginiae (Baird). Virginia Warbler.

This species proved to be very abundant during the spring migration, particularly in the lower parts of the mountains; but the most of them seem to go farther north, and but few, compared with the numbers seen in April and the early part of May, remained through the summer to breed. The earliest arrival noted was on April 10th and soon after they were quite abundant, mostly in the oak region below 5000 feet, remaining so throughout April and up to the first week in May, at which time the migrating birds had about all passed on. All that were seen after that I took to be breeding birds, for they gradually moved to a higher altitude, (6000 to 8000 feet) and were nearly all in pairs. About the middle of April, 1902, I found a few *virginiae*, together with other migrating warblers, in the willows along the San Pedro River, some fifteen miles from the mountains. Throughout the summer they were

very quiet and inconspicuous; I once or twice heard the male bird singing from some elevated position, but as a rule they kept quietly in the underbrush, close to the ground, and were most easily overlooked. On May 20, 1903, I found a nest about half finished, which on the 29th contained four fresh eggs. It was built on a steep sidehill about ten feet from a much traveled trail, and was very well concealed; being under a thick bunch of overhanging grass, and sunk into the ground besides, so as to be entirely hidden from view. This was at an elevation of about 8000 feet, which seems to be about the upward limit for this species in this region. About the middle of July, young birds began to appear, and from this time, young and old moved down into the foothill region once more, where I took specimens at various times through the month of August, though they were not nearly as numerous as in the spring.

In the spring males collected there is great variation in the amount of yellow on the breast; in some instances it extends quite to the bill, and over the sides of the breast, while in some few it is restricted to a small, faintly indicated spot. Usually the yellow is restricted to the center of the breast and lower part of the throat, the upper throat and chin being grayish white; and even in the brightest colored specimens there is a more or less well defined line of grayish extending across the yellow of the throat. Just one spring bird shows signs of moult on the chin and throat, the new feathers being yellow, the old ones gray; so possibly it is the older birds which are the brightest in this respect. In some females the yellow marking is almost entirely absent, while in others it is quite bright, more so than in some of the duller colored males; and in the females the chestnut crown patch is sometimes present and sometimes not.

An adult male taken August 18th, which has nearly completed the post-nuptial moult, has the upper parts clear gray with but very little of a brownish cast. The lower parts are grayish, strongly tinged with brown on the sides and flanks, while the yellow of the breast is overcast with grayish, and the chin and throat white, tinged with yellowish buff. An adult female taken August 22nd, in newly acquired autumnal plumage has the upper parts uniform grayish brown, much darker than the male bird just described. The crown patch is present but almost entirely concealed by the brownish tips of the feathers. The yellow of the breast is quite as extensive as in many spring specimens, but overcast with grayish; while the throat and median line of the abdomen are white with a decidedly buffy tinge, the sides and flanks being brownish. A very young male has the upper parts dull grayish brown, the breast, sides and flanks a rather paler shade of the same, while the chin, throat and abdomen are a dirty white. On the median line of the throat and on each side of the breast, a narrow line of buffy yellow pin feathers is appearing. A female, a little older, has the entire lower parts of this buffy yellow hue, a spot on the breast being almost clear yellow. Another, with sex undetermined but probably a female, is about the same but lacks the yellow on the breast, having the lower parts buffy yellow interrupted by a line of grayish feathers across the throat. Two young males taken at a later stage have lost much of the buffy hue of the lower parts, have the chin and throat grayish white, the yellow of the breast quite bright and well defined, and are losing by moult the plumage of the head, upper neck, and back, replacing it with a plumage more like the adult. In one case in which the feathers of the pileum have been

almost completely renewed, there is still no sign of the chestnut crown patch of the adult bird. It is rather curious that in all these juveniles the yellowish rump, and upper and lower tail coverts, are nearly or quite as bright as in the adult.

To sum up, it would seem that on leaving the nest the young bird is in a plumage, grayish-brown above, on the breast and sides, and whitish on throat and abdomen, which is retained but a very short time; a moult of the lower parts taking place almost immediately, and those parts becoming a more or less uniform buffy-yellow from the bill to the anal region. A little later the plumage of the upper parts is moulted, and at the same time the buffy breast and abdomen changes to grayish-white with the yellow breast spot. Through the changes the rectrices and remiges are retained and the bird is now much like the autumnal adult, though lacking the chestnut crown patch, which possibly is not acquired until the following spring.

Helminthophila rubricapilla gutturalis (Ridgway). Calaveras Warbler.

Contrary to my expectations I found the Calaveras to be rather a common migrant in this region, and in the spring at least, occurring in the lowlands as well as in the mountains. The earliest noted in the Huachuca was on April 6th and the last seen on April 25th; while about the middle of April I saw several in the willows along the San Pedro River. In the spring they were most abundant in the oaks at the mouths of the canyons, but also occurred up as high as 6500 feet. They reappeared in the fall on August 18th, and until I left, September 5th, were fairly abundant, but frequented rather different localities than in the spring; for I took none below 5500 feet, and they were most abundant along the divide of the mountain, from 9000 to 10,000 feet, where they fed mostly in the flowers and weeds which had sprung up from the summer rains. Both adults and young were taken at this time, but the old birds seemed to be the most numerous.

Helminthophila celata (Say). Orange-crowned Warbler.

On September 2, 1902, I secured a male bird of this species from where it was feeding in some low bushes at an altitude of 9000 feet. The same day I saw several more apparently the same, fluttering in and out of a thick patch of sunflowers, but was unable to get any of them. The one secured is a facsimile of some fall birds I have taken in Southern California, with the head very gray, grayish-white orbital ring, and the lower parts dull greenish yellow, obscurely streaked with grayish. On April 17, 1902, I secured a female in some willows near the San Pedro River which appears to be of this species. Allowing for the greater abrasion of the plumage, it is practically the same as the autumn bird just mentioned.

Helminthophila celata lutescens Ridgway. Lutescent Warbler.

Although I found the Lutescent Warbler to be a most abundant migrant in the spring in this region, I took but few specimens which can be considered as typical of the race; but one or two, in fact, which are as brightly colored as Pacific Coast specimens. The greater part of those secured appear to be intermediate between *celata* and *lutescens*, but nearer the latter from which they differ principally in being of duller coloration.

Although I have seen the species at Tucson in the middle of March, the earliest arrival noted in the Huachuca Mountains was on April 8th; the last seen on May 5th.

Dendroica olivacea (Giraud). Olive Warbler.

I have not found this species very abundant in the Huachucas at any time, but it is probably resident to some extent, for I secured an adult male on February 21, when the snow was deep on the ground. During March I saw several more, all adult males and single birds, usually with a troop of Pygmy Nuthatches; but it was not until the first of April, when the other warblers were arriving, that they became at all abundant. In 1902, they were few in numbers and I did not get many specimens, in fact but two adult males were observed; but in 1903 they became fairly abundant, particularly in April, when many small flocks of five or six birds each, were seen. I found them only in the pine forests of the highest parts of the mountains, even in cold weather none being seen below 8500 feet; and more were secured above 9000 feet than below it. They were seldom in company with other warblers, but when not alone, associated with nuthatches and creepers. In their actions they are more like vireos than warblers, clambering slowly and deliberately over the branches in the search for food; and uttering at frequent intervals a liquid note much like that of a bluebird, but ventriloquial in its effect, and very difficult to locate. Though frequenting the tree tops to a great extent, they seem singularly tame and unsuspecting, and several times I have had one feeding in some of the lower branches, within arm's reach of me without its showing the least sign of fear.

The male birds seem to take at least two years in acquiring the adult plumage, being indistinguishable from the female the first year, and I was surprised at the large proportion of birds in this immature plumage that were seen. At a very liberal estimate I should say that the males in adult plumage comprised barely a third of the birds seen in the spring; while in the late summer, when the flocks of juveniles appeared on the scene, the proportion of perfect plumaged males was, of course, much smaller. The male bird breeds in the immature plumage, for on June 21, 1902, I assisted Mr. O. W. Howard in securing a nest, containing four eggs, the parents of which were indistinguishable in color and markings.

About the middle of July young birds began to appear, and throughout August young and old were seen together in small flocks.

Dendroica aestiva sonorana Brewster. Sonoran Yellow Warbler.

A common summer resident along the San Pedro River. It is possible that this species occasionally breeds in the Huachucas, for on several occasions about the middle of June, 1902, I saw a single bird, a female, at the same spot, a small clump of willows in a canyon at an altitude of about 5500 feet. This warbler does not occur in the mountains at all during the spring migration, but in August, 1902, it was fairly abundant up to 6000 feet, the first seen being on August 9, and most of those observed being immature birds. An adult female taken August 26th, in fresh autumnal plumage, is very curiously colored; normally marked below, but the dark olive-green of the upper parts, wings and tail, irregularly blotched with bright yellow; so that in the character of coloration it closely resembles a tame canary.

Dendroica aestiva brewsteri Grinnell. Western Yellow Warbler.

From May 8 to 19, 1903, I found Yellow Warblers in limited numbers in some of the washes immediately below the mountains. At the time I took them to be *sonorana*, but the nine specimens I secured, five males and four females, prove to be indistinguishable from California birds; and were probably migrants en route for the Pacific Coast to-

gether with *D. townsendi*, *D. occidentalis*, *Vireo s. cassini*, and others passing through here at the same time.

Dendroica auduboni (Townsend). Audubon Warbler.

I was surprised at not finding this species in the mountains during the winter months, but it seems to occur in the Huachucas only as a migrant. A single bird was seen near the base of the mountains on March 6th, but he was much in advance of the rest of his tribe, for no more were seen until March 24th; after which they steadily increased in numbers until the end of April. A great many were seen in the pines on the top of the mountain on May 11, 1903, and they left rather abruptly about a week later. Though distributed over all parts of the mountains, they were at all times more abundant in the higher pine region, than elsewhere; and on April 24, 1903, I found them particularly numerous along the divide of the mountains, evidently migrating. They could hardly be said to be in flocks on this occasion, for along the ridge, which runs almost due north and south, there was for several miles a continuous stream of Audubon Warblers travelling rapidly from tree to tree, always moving in a northerly direction; sometimes a dozen or more in one pine, and sometimes only two or three, but never stopping long and all moving in the same direction. Almost all that were seen on this occasion were high plumaged males, hardly half a dozen females being observed for the day.

Dendroica auduboni nigrifrons (Brewster). Black-fronted Warbler.

This, the only form of *auduboni* that breeds in the Huachucas, occurs during the summer months, though in rather limited numbers, in the higher pine regions from 8500 feet upwards. On one occasion, April 5, 1903, I secured a male *nigrifrons* from a flock of *auduboni* feeding in some live-oaks near the mouth of one of the canyons at an altitude of about 4500 feet, but this is the only time that I have seen it below the altitude given above; and it is also exceptional in the early date of its arrival. No more were seen until the second week in May, which seems nearer the usual time of arrival, for in 1902, the first seen was on May 9th. A young bird just from the nest was secured on July 1, 1902, and another about the same age was taken on July 13th. A young male taken August 19th, which has discarded the streaked juvenile, for the first winter plumage, is practically indistinguishable from specimens of *auduboni* at the same stage, being perhaps a shade darker throughout. In two adult males, taken August 26th and August 30th, respectively, which have practically completed the postnuptial moult, the black of the under parts is quite as extensive as in spring birds, but obscured by gray tips to the feathers. In one the feathers of the back are much as in spring birds, though with rather broader gray edgings and overcast with a faint wash of brown; while the white patch formed by the edgings and tips of the middle and greater wing coverts is nearly perfect. In the other, the plumage of the back is overcast with brown to such an extent that hardly a trace of the dark centers of the feathers is discernable, while the white wing patch is heavily washed with the same.

Several specimens were taken intermediate in their characteristics between *auduboni* and *nigrifrons*: some, of the size of the latter, though in color but little darker than *auduboni*, while some show every gradation of color between the two extremes.

In the darkest specimens of *nigrifrons* the black of the under parts extends from the yellow throat patch to the flanks uninterruptedly, even

the white of the abdomen being mixed with black; while the yellow areas on the throat, crown, and sides, are more restricted in size, and brighter in color, as compared with *auduboni*. In one specimen there is a black line, narrow but well defined between the yellow of the throat and the lower mandible. But two adult females of *nigrifrons* were secured; both are darker than female examples of *auduboni*, and with the yellow areas more restricted. In one the breast, sides and flanks are covered with rather narrow, sharply defined black streaks; the other has the breast and sides uniformly black, but with the feathers broadly edged with lighter, producing a dark slaty appearance, while the flanks are streaked with dusky.

Measurements (in inches):

	Length.	Alar expanse.	Wing.	Tail.
<i>Dendroica auduboni nigrifrons.</i>				
Average of nine adult males...	5.96	9.84	3.26	2.36
Maximum	6.12	10.18	3.40	2.37
Minimum	5.81	9.56	3.18	2.30
<i>Dendroica auduboni.</i>				
Average of twelve adult males...	5.79	9.49	3.05	2.26
Maximum	6.06	10.	3.30	2.37
Minimum	5.62	9.06	2.94	2.25

***Dendroica graciae* Baird.** Grace Warbler.

Of very irregular occurrence; in the spring of 1902, I saw but a single bird, whereas in the following year it was fairly abundant during the spring migration. In 1896 it was still more abundant, and what is rather unusual remained to breed in considerable numbers. The earliest arrival noted was on April 12, 1903; they remained fairly numerous throughout the month and disappeared about the first of May. A bird of the pine woods, it was found almost exclusively in the higher mountains, all that were taken being above 8000 feet, with the exception of a few secured in the spring of 1896 as low as 6000 feet. In their travels they associated with the other migrating warblers, particularly with *occidentalis* and *townsendi*, and I found it by no means easy to distinguish the various species in the tree tops; though *graciae* acts more like a fly-catcher than any of the others, constantly flying out from the trees to a considerable distance after insects. Several juveniles were taken during July, 1896; and in July and August, 1902, one immature and six adults in fresh autumnal plumage were secured. A young male taken July 13th is in the brown streaked plumage, but yellow feathers are beginning to appear along the median line of the throat and upper breast, and the yellow superciliary stripe is also beginning to show. Another, a little older, has the streaks of the lower parts restricted to the sides and flanks, and the yellow markings nearly perfect. A male taken on July 30th, which has just discarded the juvenile for the winter plumage, differs from the autumnal adults in having the white of the under parts more strongly tinged with buff; and whereas the adult has the back decidedly streaked, though the markings are overcast by the brownish edgings to the feathers, in the juvenile these markings are but imperfectly indicated. Autumnal adults have the upper parts overcast with brown to such an extent, that except on the sides of the crown where a little of the black shows through, the characteristic markings are entirely hidden. Females are even more brown than the males, and have the black streaks on the sides of the breast and flanks nearly concealed as well.

Dendroica nigrescens (Townsend). Black-throated Gray Warbler.

A very common summer resident, occurring principally below 7500 feet, and favoring the brush covered hills of the oak belt to a great extent. The earliest arrival noted was on March 31st.

Dendroica townsendi (Townsend). Townsend Warbler.

One of the most abundant of the migrating warblers in this region. In the spring I found it in all parts of the mountains, but most abundant along the canyons from 5000 to 7500 feet. The first seen was on April 9th, and the last May 15th. At the beginning of the fall migration in 1902, a few were seen in the pines above 9000 feet on August 19th; and they remained in limited numbers up to the time I left the mountains, September 5th.

Dendroica occidentalis (Townsend). Hermit Warbler.

A common migrant both in the spring and fall. The first arrivals appeared in the very highest parts of the mountains, but a little later they could be found in all parts of the range, and on April 17, 1902, I saw a few in some willows near the San Pedro River. The first seen in the spring was on May 9th, and the last, May 28th. They reappeared in August, but at this time were seen only in the pines above 8500 feet. It is rather singular, and in contradiction to the idea that in the migrations the old birds go first in order to show the way, that the first secured in the fall was a young female, taken August 7th. The young birds then became very abundant, and on August 14th the first adult female was taken; and not until August 19th was an adult male seen. The adults then became nearly as abundant as the juveniles, and both together were more numerous than I have ever seen them in the spring, on several occasions as many as fifteen to twenty being seen in one flock.

The young birds of both sexes were in many instances quite indistinguishable in coloration, none of the young males having as much black on the throat as the adult female.

Seiurus noveboracensis notabilis (Ridgway). Alaska Water-Thrush.

I met with this species on but one occasion, August 31, 1903, when I secured a female at an altitude of about 5500 feet. Scott has recorded its occurrence in the Santa Catalina Mountains in September, and Henshaw, at Camp Crittenden in August, so it may very possibly prove to be a regular fall migrant through this region.

Geothlypis tolmiei (Townsend). Tolmie Warbler.

A fairly common migrant in the lower parts of the mountains, occurring up to 6000 feet, mostly in the thick underbrush along the streams. I observed it in the spring from April 11th to May 18th; in the fall one was seen on August 21st, and through the rest of the month it was fairly abundant, though not as much so as in the spring.

Geothlypis trichas occidentalis Brewster. Western Yellow-throat.

A rare migrant in the mountains though of common occurrence in the lower valleys of this region. In the Huachucas I have seen it on but two or three occasions, and then only in the lowest parts, at the mouths of the canyons and in the washes below. A male was secured, and another seen, on May 8, 1903, and a female taken on May 22nd.

A breeding male taken on the San Pedro River, about twenty miles from the mountains, on July 6, 1902, and submitted to Mr. Ridgway, was pronounced by him as "inclining toward *G. t. melanops*." This bird

is of about the same size as the migrating yellow throats that pass through this region, but is very different in coloration. The entire lower parts, including the lower tail coverts, are bright yellow, darker on the flanks. The upper parts are greenish yellow, even the grayish white of the crown and sides of the neck being strongly suffused with the same color; while the black "mask" is continued in a long point, further down the sides of the neck than in the case with *occidentalis*.

Icteria virens longicauda (Lawrence). Long-tailed Chat.

In 1896 several pair of Chats bred in the vicinity of our camp in Ramsey Canyon, at an altitude of about 5500 feet, but this is the only place in the mountains where I have known them to do so; and the only year in which I have seen them through the summer months. As a rule two or three migrating birds seen during April near the base of the mountains, are all that appear; though along the San Pedro River they breed in tolerable abundance.

Wilsonia pusilla pileolata (Pallas). Pileolated Warbler.

An exceedingly common migrant in all parts of the mountains, though most abundant below 6000 feet. It was observed in the spring from April 12th to May 22nd; reappearing in the fall on August 21st. On August 26, 1902, I saw a Pileolated Warbler on the summit of the highest peak in the mountains, about 10,000 feet altitude. All the specimens secured are referable to *pileolata* rather than *chryseola*, though the latter also might be expected to occur here as a migrant.

Setophaga picta Swainson. Painted Redstart.

One of the most beautiful of the summer residents of the mountains, the Painted Redstart is pretty sure of receiving rather more than his fair share of the attention of the visiting ornithologist, for it is abundant in numbers, and, for such a bright colored bird, not at all shy. In fact, instead of escaping observation he seems to court it, for with wings and tail outspread, and feathers puffed out to show their beauties to the best advantage, he can be seen clambering over tree trunks or mossy rocks, turning now this way and now that, as if conscious and proud of his beautiful appearance even when engaged in the commonest duties of life, gathering insects for the young or material for the nest. Females, as well as males, strut about in the same ostentatious manner, for in color and appearance the sexes are absolutely indistinguishable; and even the dull colored juveniles adopt the same style as soon as they are able to fly. They are most abundant in the damp, shady canyons in the breeding season, between 5500 and 8000 feet; but during the migrations, though ascending no higher, they are more generally distributed over the mountains, and can be found quite to the base of the range. They reach the mountains very early in the spring, the first arrival being noted on March 15th, and a week or so later they were quite abundant. At all times rather a solitary bird, they are never to be seen in the mixed flocks of migrating warblers, but prefer rather to forage for themselves; and I have never seen more than a pair of birds together, except for the short time that the adults tend the young after the latter leave the nest. Though feeding to some extent in the underbrush, and even on the ground and over the rocks, they do not stick closely to such places as do the Tolmie Warblers and Yellow-throats; nor on the other hand do they frequent the extreme tree tops and tips of the limbs as the Townsend, Hermit and other Warblers do, but preferring rather the medium between the two extremes, they can be seen clambering about the sides

of the tree trunks and over the larger limbs, examining the crevices and interstices in the bark in search of food, and occasionally flying out a short distance after some passing insect. A call note is uttered at frequent intervals, not unlike the peep of a young chicken, and occasionally the short, low song of the male can be heard. Though this is usually given utterance to between intervals of feeding, I have once or twice, usually in the early morning, seen the male bird ascend to the top of a tall tree, and from the tip of some dead limb repeat his song, sometimes for half an hour before descending. Though the nest is usually built near the bottom of the canyon, and generally close to the water, this is not always the case, for I saw one nest that the birds had built in a crevice on the side of an open cut leading into a tunnel on a ridge between two canyons, and nearly a mile from water. The strangest part of it was that two men were working and blasting, daily in the tunnel without the birds seeming disturbed. When the young appear, the first being seen about the end of June, they are dark sooty black, rather paler on the abdomen, but they quickly begin to lose this plumage; most of those secured having a few glossy black feathers showing on the back, and one or two red ones on the lower parts. The juvenile plumage is moulted entirely with the exception of the remiges and rectrices, (even the wing coverts being renewed, though the pattern of coloration is the same in the juvenile as in the adult); specimens taken during July and August being variously intermediate in color, and more or less covered with pin feathers. The adults moult at the same time; one taken on August 20th having entirely completed the change, though others secured later have many pin feathers still scattered over the body. By the first week in September, however, the moult is practically completed, and at this time young and old are indistinguishable in color; only differing from spring specimens in a slightly scaled appearance of the red of the lower parts, due to those feathers being faintly tipped with grayish.

Cardellina rubrifrons (Giraud). Red-faced Warbler.

The Red-faced Warbler and Painted Redstart are always associated together in my mind, being both of a tropical appearance in decided contrast with their duller colored associates, and essentially alike in their habits and modes of life. They inhabit rather different areas in the mountains, *rubrifrons* being found during the breeding season from 7000 feet upwards, and in the migrations as abundant in the higher pine regions as anywhere. The first arrival was noted April 20th, and up to the middle of May they were seen in considerable numbers along the canyons, often in company with other migrating warblers. During the breeding season their numbers seem to be greatly decreased, but this is probably more apparent than real, as at this time they are very quiet and inconspicuous; and as soon as the young begin to appear, about the middle of August, are as numerous as ever. The moult takes place in August, and specimens secured immediately after, in fresh autumnal plumage, have the white of the under parts strongly tinged with pink. Early spring specimens have this pinkish tinge, though in a lesser degree, but in breeding birds taken during May and June it is almost entirely absent. After the young leave the nest they spread out more and descend to rather a lower altitude, though I have never taken specimens below 5500 feet, and at the same time they can be found in the highest parts of the range.

A nest containing four eggs, found on May 20, 1903, at an altitude of about 8500 feet, was well concealed under an old rotten log, on a steep

bank by the side of a trail, and could never have been seen had not the bird darted from the nest when it was approached.

Cinclus mexicanus Swainson. American Dipper.

On August 4, 1902, I saw a dipper in the narrow, rocky defile known as the "Box" in Ramsey Canyon. Several times in the month of August I saw what was probably the same bird, in this place; but it was so wild as to be unapproachable, and though it never flew to any great distance I was quite unable to get a shot at it.

Mimus polygottos leucopterus (Vigors). Western Mockingbird.

A summer resident in the lower canyons and very abundant in the washes leading from the mountains. It does not seem to remain during the winter, for though a single bird was seen on February 18th, I believe it was one that had strayed from the valley below, and quickly returned there, for no more were seen until the middle of April. As the summer advances they ascend higher and higher in the canyons, about 5500 feet being their upward breeding limit; but on one occasion, August 14, 1902, I saw a Mockingbird right on the divide of the mountain at an elevation of about 8500 feet. Specimens taken the first week in May were not yet breeding, and a female secured on May 18th had laid part of its set; while on July 5th I examined eight or ten nests along the San Pedro River, all of which contained eggs in various stages of incubation.

Toxostoma curvirostre palmeri (Coues). Palmer Thrasher.

Breeds in very limited numbers in the lower parts of the mountains, none being seen above 5000 feet. It is common enough in the brush covered valleys below, and after the breeding season, moves up toward the mountains to some extent. During August young and old, equally ragged in appearance, were seen along the foothills in considerable numbers; but they were very shy and difficult to approach, and from their disreputable appearance I did not covet them very much, so secured but few specimens.

Toxostoma crissalis Henry. Crissal Thrasher.

This is apparently a very rare species in this region, for a juvenile, though fully fledged, female, secured August 9, 1902, at the base of the mountains, is the only one I have seen. This bird, as well as the Palmer Thrasher, was busily engaged in grubbing up a species of small black beetle which abounds after the summer rains, from the shallow burrows that it occupies.

Heleodytes brunneicapillus couesi (Sharpe). Cactus Wren.

I have never seen the nest of this species in the Huachucas, though very possibly it breeds in limited numbers in some parts of the range; but in the valley below it is a common resident, ascending, together with the thrashers, to the base of the mountains after the breeding season.

Salpinctes obsoletus (Say). Rock Wren.

A common resident in the stony foothill region, ascending in places up to 5000 feet. I could discern no difference in the distribution of the species at the different seasons.

Catherpes mexicanus conspersus Ridgway. Canyon Wren.

Resident throughout the mountains, though nowhere very abundant, the Canyon Wren is to be found around the steep cliffs and precipices bordering the canyons, or on the rock strewn foothills. A female secured on April 12th contained an egg about ready to be laid; and by the middle of June troops of young led by their parents were seen in many places.

Thryomanes bewicki leucogaster (Baird). Baird Wren.

I found this wren to be quite common in the lower parts of the mountains, ranging up to about 6000 feet, and occurring also in suitable localities in the valley below. It appeared to be resident, and I could discern no increase in the number of birds seen during the migration.

Though a common species the nest is quite difficult to find, and I have seen only three or four, all built in cavities in the trees, from six to fifteen feet from the ground.

Specimens secured vary much in size but little in color, though the only autumnal adult taken, a male on August 17th which had nearly completed the moult, is appreciably darker than any spring specimens.

Troglodytes aedon aztecus Baird. Western House Wren.

An abundant summer resident in the higher parts of the mountains, breeding from 7000 feet upward, but most abundant in the pine forests above 8000 feet. Upon their arrival in the spring, the first being noted on April 8th, they were distributed over all parts of the range, but soon withdrew to the higher altitudes to breed; nor did they descend again when the young were out of the nest, as so many species similarly placed, did. Spring specimens are uniformly very pale, and easily distinguished from *parkmani* of the Pacific Coast; but a male taken September 2nd, which has quite completed the moult, is much darker than the spring birds and bears a close resemblance to fall specimens of *parkmani*.

Olbiorchilus hiemalis pacificus (Baird). Western Winter Wren.

I met with this species on but one occasion, on April 2, 1902, when a male bird was secured at an altitude of 5500 feet. It is probably a straggler from the Pacific Coast, of rare and irregular occurrence.

Certhia familiaris albescens (Berlepsch). Mexican Creeper.

A fairly common summer resident in the higher pine regions, and as a rule restricted to those parts and but seldom descending below 7000 feet. The earliest arrival noted was a female, taken with a female of *C. f. montana*, on March 3, 1903, at an altitude of 5700 feet, the lowest altitude at which I have ever found the species. About ten days later they were fairly numerous along the divide of the mountains, where the faint call note peculiar to the species could be frequently heard, though the birds themselves generally succeeded in evading observation. About the middle of July young birds began to appear, and they seemed more abundant at this time than at any other. As with many other species breeding in the higher parts of the range, a downward movement began about this time, and though never descending to the foothills, in the late summer Creepers were found scattered all through the upper part of the oak belt. The juveniles seem to be attended by their parents for a long time, for up to the first week in September, when young and old were practically indistinguishable in size and general appearance, the families

still clung together, and the old birds were seen continually feeding their offspring.

In differentiating this race great stress has been laid upon the absence of white markings on the primary coverts of *albescens*, a characteristic which is not borne out by the series before me, for out of fourteen specimens, young and old, there are just three that lack these markings. In most cases they are quite as distinct and apparent as in any specimens of *zelotes*, or the two examples of *montana* in my collection.

Certhia familiaris montana Ridgway. Rocky Mountain Creeper.

A creeper submitted to Mr. Ridgway and pronounced by him to be *montana*, was secured in Miller Canyon on March 1, 1903, at an altitude of 5500 feet. Another bird practically the same in markings and coloration, and referred to above, was taken on March 3rd in the same canyon. These were probably migrants going further north, and they may be of regular occurrence in this region during the migrations. The paler coloration, above and below, longer and more slender bill, and generally larger size, serves to distinguish this race from the breeding bird (*albescens*) of the mountains of Southern Arizona.

Sitta carolinensis nelsoni Mearns. Rocky Mountain Nuthatch.

Resident throughout the mountains, though most abundant in the higher pine regions. During the cold weather it is quite common in the oaks along the base of the mountains, but though a few breed there, the majority of them ascend to a higher altitude in the summer. Several were seen hard at work excavating for their nests on April 6th; and a set of eggs was secured by O. W. Howard on April 19, 1902. They seem to be at all times rather solitary birds, and though a single one may occasionally be seen in a flock of Pygmy Nuthatches or Chickadees, I cannot recall ever seeing more than a pair of them together. Birds taken in August and September are much darker than spring specimens, and some males, possibly immature, have the black of the crown extending in disconnected spots on to the dorsum.

Sitta canadensis Linnaeus. Red-breasted Nuthatch.

On April 6, 1902, I secured four Red-breasted Nuthatches from a flock of a dozen or more feeding in some pines in a steep, narrow canyon, at an altitude of about 8500 feet. This is the only occasion on which I have seen the species in the Huachucas, and from the scarcity of records it would seem to be of rare occurrence anywhere in Arizona.

Sitta pygmaea Vigors. Pygmy Nuthatch.

An abundant resident, though restricted entirely to the higher parts of the range and rarely descending as low as 6000 feet, the Pygmy Nuthatch is seen and heard everywhere in the pine regions; going about in large flocks and travelling rapidly and restlessly from tree to tree. During the migrations they seem to form a sort of nucleus for other birds to gather around, and are usually accompanied by a number of migrating warblers vireos, etc. Many of them remain in small flocks up to the middle of May, though others may be seen at work at their nests in some old stump early in April; so by the time the last of them are paired off, those that first went to work are nearly ready to appear with their broods, and there is consequently hardly any time when Pygmy Nuthatches are not to be seen in flocks.

Baeolophus wollweberi (Bonaparte). Bridled Titmouse.

This, one of the characteristic birds of the mountains of Southern Arizona, is found in the greatest abundance everywhere in the oak regions of the Huachucas, breeding occasionally up to 7000 feet, but most abundant below 6000 feet. On one occasion, late in the summer, I saw a Bridled Titmouse in a flock of Lead-colored Bush Tits on the divide of the mountains at about 8500 feet, but it is very unusual to see the species at such an altitude. In February and March they were in small flocks of from twelve to fifteen birds, and about the middle of March they began to pair off, though one or two small flocks were still seen during the first week in April. Early in June young birds began to appear, and soon the broods, attended by their parents, were seen everywhere in the oaks. The young are essentially like the adults as to the markings about the head, but duller colored and with the black of the throat more or less obscured by grayish. About the middle of July the adults commence to moult, the new plumage being entirely acquired by about the first of September. Adults in fresh autumnal plumage are more olivaceous on the dorsum and rump than are spring specimens, which are usually of a more uniform grayish cast throughout. At the end of August they were gathered in rather larger flocks than I have seen them in at other times, sometimes as many as twenty or twenty-five being seen together.

Psaltriparus plumbeus Baird. Lead-colored Bush-Tit.

I found this species in the Huachucas in February, though not as abundant as it was later on, nor did I see any in the higher parts of the range until later in the spring. During the summer it seems to be equally distributed over all parts of the mountains, from the highest peaks down to the groves of live oaks on the plains immediately below the mountains. About the middle of March the birds commenced to pair off, and I found one nest about half finished on March 26th. The earliest nests found were all in the lower foothill regions, built mostly in scrub oak and small juniper trees, usually not over eight or ten feet from the ground; but later in the season they nest abundantly in the higher altitudes, sometimes high up in the pine trees. I saw one nest at the very top of a tall pine, but the tree was growing on a steep hill side, and the nest was about on a level with the trail from which I saw it. Of the spring specimens collected, the majority had bright yellowish-white eyes; but in about a third of either sex the iris was brown; several of the adults have the flanks decidedly tinged with vinaceous. I took no specimens that could be referred to *lloydi* though several juveniles, undoubtedly *plumbeus*, have some slight indication of a dusky line over the auriculars; and one young female has a fairly distinct, though narrow, black line or collar across the hind neck.

Auriparus flaviceps (Sundevall). Verdin.

Though the Verdin is exceedingly abundant along the San Pedro River and everywhere in the lowlands it but very rarely ventures up into the mountains, and I have seen it in the Huachucas but once or twice, and then only in the foothills. I have seen one or two old nests in some of the canyons so it sometimes breeds in the mountains, though probably very rarely.

Regulus calendula (Linnaeus). Ruby-crowned Kinglet.

A common migrant and probably a winter resident. I saw a few in February, but they did not become abundant until about the middle

of March, when their numbers were suddenly greatly increased. At this time they could be seen feeding in trees along the streams in flocks of from fifteen to twenty-five individuals, being larger gatherings of these birds than I have seen elsewhere. Though occurring in all parts of the mountains up to the highest peaks, they were most abundant in the canyons below 7000 feet; and remained until about the middle of May, the last being seen May 13th. In the fall, up to the time I left, September 5th, they had not yet returned.

Poliptila caerulea obscura Ridgway. Western Gnatcatcher.

This is the only species of gnatcatcher I have observed in the Huachucas. On the brush covered plains below, and along the San Pedro River, *plumbca* breeds in moderate abundance, but I have never seen it in the mountains, the altitude being probably too high. *Obscura* is probably resident in the Huachucas, though I have not found it very abundant at any time; and it does not seem to range above 6500 feet, and but rarely to that altitude. It seemed more particularly to frequent the rather barren foothill country, staying in the oaks and brush high up on the hill sides rather than in the canyons. I saw several already paired on April 7th.

Myadestes townsendi (Audubon). Townsend Solitaire.

The Townsend Solitaire occurs in this region only as a migrant, passing through early in the spring. The first noted was on March 7th, and the last on April 30th. They were found in all parts of the range, for I took specimens at nearly 10,000 feet, and others in the washes below the mountains. They preferred rather open ground, and in the canyon I did most of my collecting in there was a large patch of cleared ground which they seemed particularly to favor, and occasionally as many as eight or ten birds could be seen sitting on the tops of the trees surrounding the clearing. As a rule they stayed high up in the trees, and were at all times shy and hard to approach. They were in full song before they left.

Hylocichla ustulata (Nuttall). Russet-backed Thrush.

Hylocichla ustulata swainsoni (Cabanis). Olive-backed Thrush.

In 1896 two thrushes from the Huachuca Mountains sent to Mr. Ridgway to be identified were returned to him labelled, the one *ustulata*, the other *swainsoni*. These two represent the extremes of color of a considerable series of these birds from the region under consideration, the one (*ustulata*) being an extremely pale colored bird, sparsely marked on the breast, indistinguishable from breeding birds from Southern California; while the other (*swainsoni*) is a very dark colored heavily marked bird. Between these extremes the specimens collected form an unbroken chain, so that it is impossible to say where the one ends and the other begins. The series of *swainsoni* are all very olivaceous in their coloration, without any trace of the grayish on the upper parts that Mr. Oberholzer ascribes to the sub-species *almae*, (Auk. XV, page 303). otherwise I should think it more probable that the Huachuca Mountain birds belonged to that race than to *swainsoni*.

These two varieties appear in the spring at about the same time, and in the same localities, being abundant along the streams in the lower canyons at a time when most of the migrants have already passed on to their breeding grounds. I have specimens of both *ustulata* and

swainsoni taken on May 2, 1902, which is the earliest date on which I have noted them, and they remain until about the end of the month.

***Hylocichla guttata* (Pallas).** Alaska Hermit Thrush.

The Hermit Thrushes as found in this region are an interesting though rather puzzling group, for though the individuals were never at all abundant, the number of varieties found passing through during the migrations was surprising. The birds were all extremely shy and hard to approach, and it was only by hard work that I managed to secure as many specimens as I did. In all twenty-four Hermit Thrushes were obtained, representing the following races: *guttata* (9), *auduboni* (10), *nana* (1), *slevini* (4). These figures probably represent pretty accurately the relative abundance of the various races. The specimens of *guttata* were all taken at a low altitude, none above 5500 feet; usually in thick brush along the canyon streams. One specimen (No. 3434, March 1, 1903) is an extremely grayish colored bird, with the spots on the breast ill-defined and run together, and may possibly represent the Sierra Nevada form *sequoensis*, but in size it does not differ from true *guttata*.

Possibly a few of these thrushes spend the winter in the Huachucas, for one was taken as early as February 19 (1903); the last secured was on April 20 (1902).

***Hylocichla guttata auduboni* (Baird).** Audubon Hermit Thrush.

Very possibly this thrush breeds in some parts of the Huachucas, though if it does it must be in very limited numbers, for personally I have never met with it except in the migrations. I secured most of my specimens of *auduboni* in the highest parts of the range, feeding, not in the thick bushes and underbrush, as most of the thrushes do, but on the open ground under the big pines, scratching and working in the pine needles with which the ground was thickly covered. One or two specimens were secured in the canyons as low as 6000 feet, but the great majority of the birds seen were along the divide of the mountain, from 8500 feet upward. The earliest arrival noted was one secured on April 18 (1903), and the latest a female shot by W. B. Judson on May 19 (1896). This last is in badly worn plumage and may have been a breeding bird; they were most abundant about the first week in May.

***Hylocichla guttata nana* (Audubon).** Dwarf Hermit Thrush.

From its extremely dark coloration and rich markings I have ascribed to this race a female, shot in a thick tangle of wild grape vines and other shrubbery, near the mouth of Miller Canyon on April 6, 1903.

***Hylocichla guttata slevini* (Grinnell).** Monterey Hermit Thrush.

This seems to me to be a perfectly distinct and easily distinguishable variety, about the recognition of which there should be no hesitation, for in size it departs from *guttata* as far to one extreme as *auduboni* does to the other; and the extremely pale coloration of *slevini* also renders it one of the most easily recognized of the rather puzzling branches into which the Hermit Thrush divides. At first it seems strange to find a bird belonging so decidedly to the Pacific Coast wandering as far as eastern Arizona, but when we consider that such species as the Hermit and Townsend Warblers, Cassin Vireo, and others, pass regularly through this region, it is evident that there is a regular line of migration from the Pacific Coast to the southeast, in spite of the formidable

deserts that intervene, and might be expected to form an utterly impassible barrier.

I believe *slavini* to be a fairly common migrant in the Huachucas, though but few specimens were secured, for it is an extremely shy bird, and from the nature of the ground frequented, exceedingly difficult even to get sight of. *Auduboni* was found mostly in the pine woods, and *guttata* along the canyons, but *slavini* seemed to prefer the dense thickets covering the steep, dry, hillsides, an unpleasant place to travel in at any time, and almost hopeless ground in which to pursue a shy, secretive bird like the present species. The specimens secured were, a male shot on March 9, 1903, and two females taken on May 8th, and another on April 19, 1902.

I have a specimen of *slavini* in my collection, from which the label was unfortunately lost, which was one of a lot of skins (now in the possession of W. Lee Chambers) put up by R. D. Lusk in the Chiricahua Mountains. If this specimen came from that range, as would seem to be the case, it probably indicates the extreme eastern limit to which the species wanders.

***Merula migratoria propinqua* Ridgway. Western Robin.**

This species is a fairly common resident in the Huachucas, and I could see no difference in its numbers at different seasons. During the cold weather the Robins could be found in abundance along the lower canyons and through the foothills generally, but by the end of April they had retreated to the higher pine regions, few being seen below 8000 feet during the breeding season. I took fully fledged young on July 1, and by the middle of the month they began to move down to a lower altitude, the spotted juveniles being seen in all parts of the mountains.

***Sialia mexicanus bairdi* Ridgway. Chestnut-backed Bluebird.**

During February and the early part of March I found the Chestnut-backed Bluebirds quite numerous in the lower foothills, and on the plains immediately near the mountains, being entirely absent from the higher parts of the range, where the snow still lay deep on the ground; but about the middle of March they began to move upward, and by the first of April there were none to be seen except in the higher pine regions, their breeding grounds. Here they remained through the summer in the greatest abundance, none being seen below 8000 feet, and being most numerous along the divide of the mountain. About the middle of August they began, to some extent, to move down to a lower altitude once more, for the evening of August 12th a small flock was seen flying overhead near the base of the mountains.

The male birds collected show considerable variation in the shade and intensity of the blue coloring, but are remarkably uniform in the pattern of the markings; having with hardly an exception the interscapular region "solid" chestnut, and the sides and flanks of the same color extending broadly across the breast. In just one specimen, a breeding bird in rather worn plumage, the blue of the throat and abdomen just meets on the median line of the breast; while the chestnut of the upper parts is reduced to a mere line across the back. A juvenile male taken August 26th is still in the spotted plumage, though with large chestnut patches appearing on the sides and flanks.

Passer domesticus (Linnaeus). English Sparrow.

In the report on the English Sparrow published by the Department of Agriculture in 1889, this species was reported as present at Camp Huachuca in the summer of 1886 (page 200, l. c.). I have never seen the bird either in the grounds of the post or anywhere in the surrounding country, and it has probably been exterminated in this region since that time.

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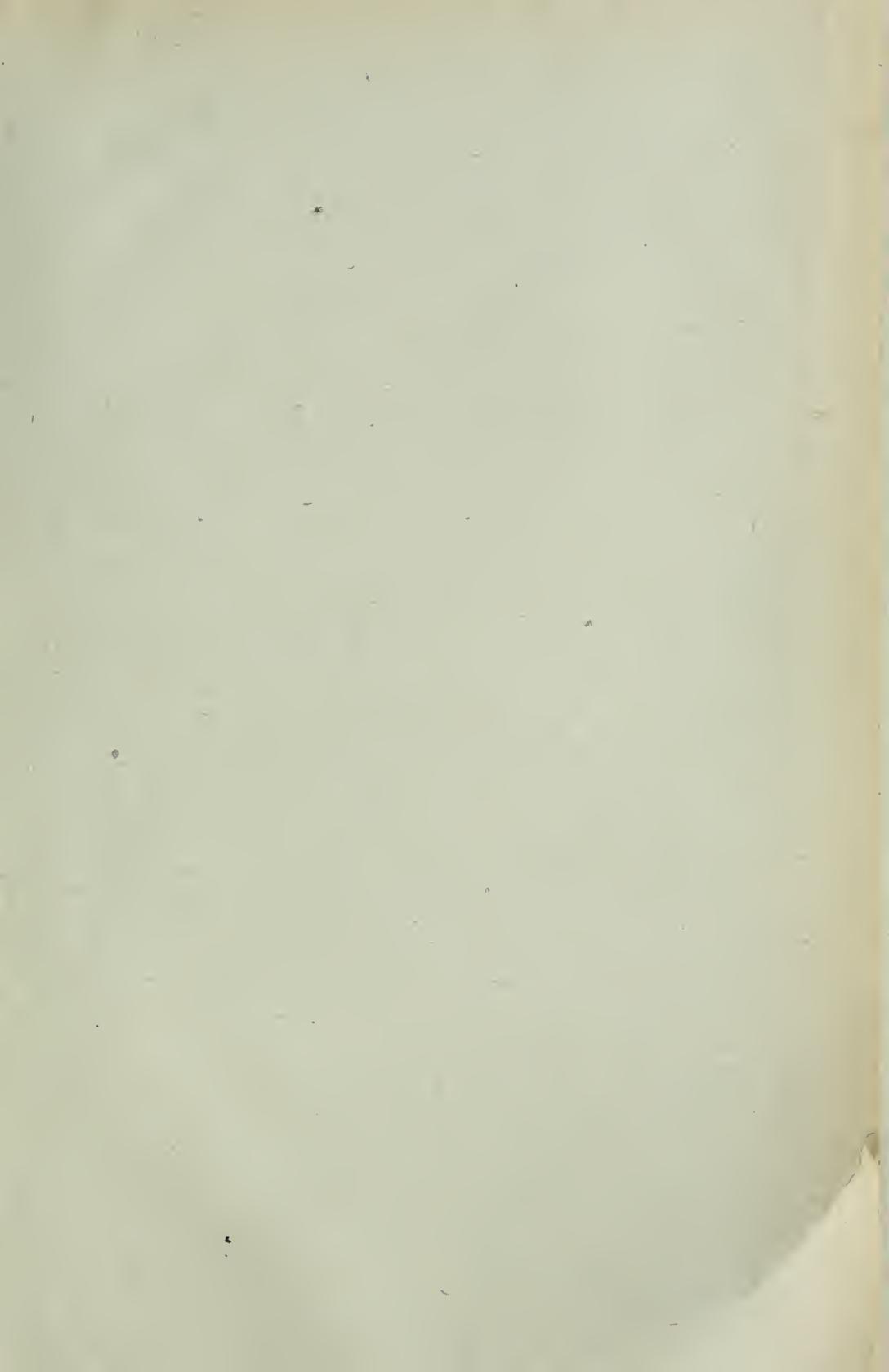
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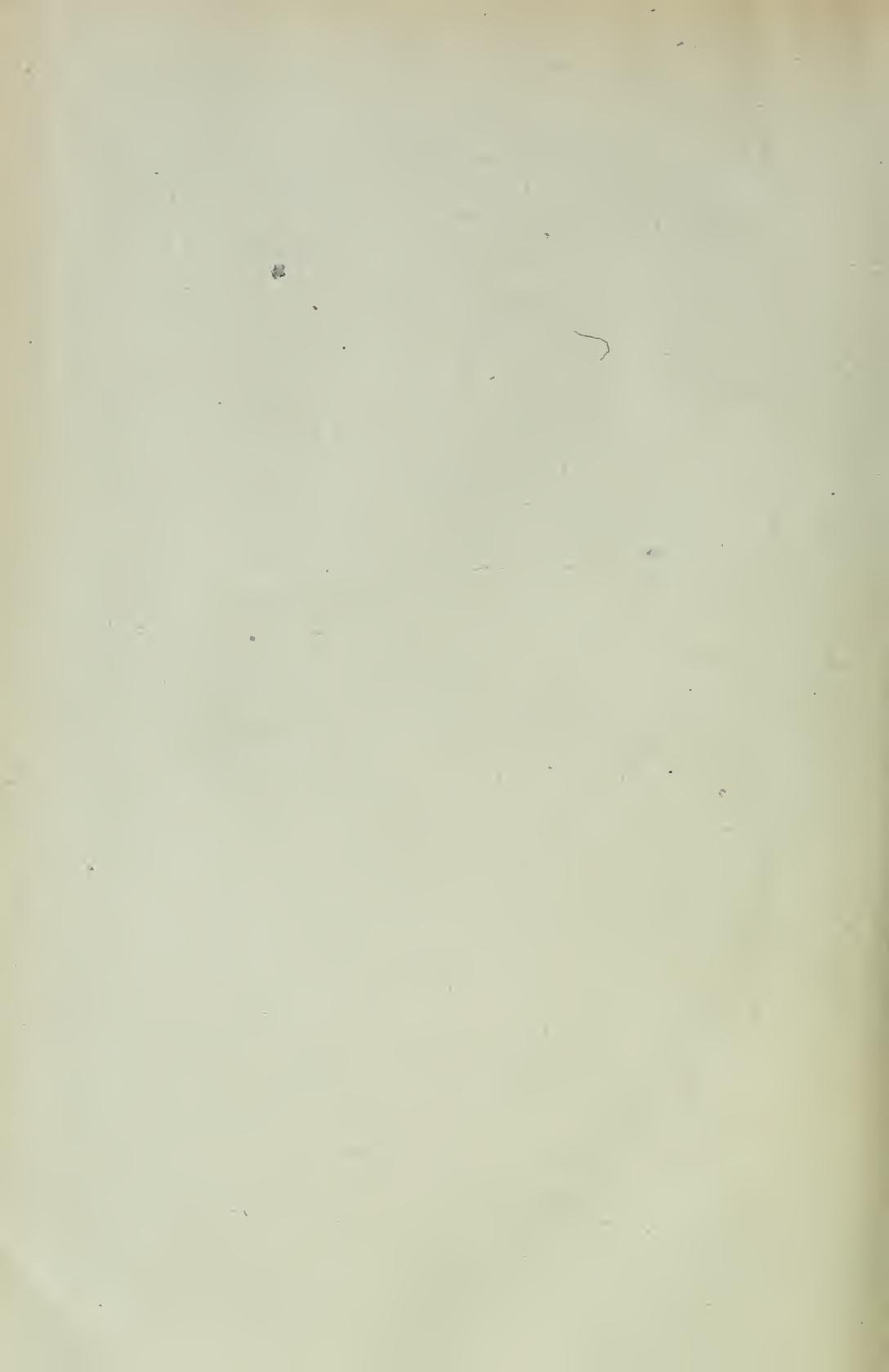
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