

ADDITIONAL NOTES ON THE BIRDS OF THE
UPPER PECOS.BY FLORENCE MERRIAM BAILEY.¹

IN 1883 Mr. H. W. Henshaw and Mr. E. W. Nelson spent three months in New Mexico, on the Upper Pecos River which cuts through the southern end of the Rocky Mountains between the desert valley of the Rio Grande on the west and the high plains of the Rocky Mountain plateau on the east. Their camp, which, as Mr. Henshaw says, was the focus of their operations, was only a few miles north of a road that is now being made across the mountains connecting Santa Fé and Las Vegas. The bird notes taken during their stay were published in 'The Auk' under the title, 'List of Birds observed in Summer and Fall on the Upper Pecos River, New Mexico,'² but as their observations were restricted to an area of five square miles, more extended work in the region was left, as Mr. Henshaw explains, for "the labors of future investigators."

While engaged in Biological Survey work last summer, Mr. Bailey and I crossed from the Staked Plains to the southern end of the Rocky Mountains and spent six weeks on the Pecos Forest Reserve, following the Pecos Cañon through the section covered by Mr. Henshaw's notes (his camp was located at 7800 feet), packing up the mountains to the actual sources of the river, and climbing to the summits of Pecos Baldy, and the Truchas Peaks which, at an altitude of over 13,300 feet, mark the vertical faunal terminus of the region. As we entered the Pecos Cañon from the south on July 11, and after working up to the peaks left it again on August 24, we did not see the later migrants recorded by Mr. Henshaw, and since the bird work was only a part of the general biological work to be done, we, in turn, had to leave much to 'future investigators.' The species that we added to Mr. Henshaw's list were mainly Upper Sonoran foothill birds or those

¹ Published with the permission of Dr. C. Hart Merriam, Chief of the Biological Survey.

² 'The Auk,' II, 1885, pp. 326-333; III, 1886, pp. 73-80.

of the Hudsonian and Alpine zones found on or near the peaks. By reason of our more extended vertical work we were able to throw new light on the distribution of the species noted by Mr. Henshaw, fixing altitudes, and in some instances correcting inferences.

As the mountains are pointed with peaks reaching up to twelve or thirteen thousand feet, they attract abundant rains and are supplied with innumerable glacial lakes and streams, and consequently afford a rich vegetation and a wealth of insect life, which, in turn, support a numerically rich avifauna. Vertically the mountains offer congenial homes for a wide range of species, as they include, from the foothills to the peaks, the Upper Sonoran, Transition, Canadian, Hudsonian, and Alpine zones, with their characteristic trees from low piñones and junipers through yellow pines, spruces and firs, dwarf timberline pines and firs, dwarf willows fruiting at three inches, and finally on the peaks, dense mats of arctic plants. Correlated with the floral zones the birds range from Upper Sonoran Piñon Jays to Alpine Pipits and, in rare instances, Ptarmigan. Species like the Vesper Sparrow and Horned Lark, unusual mountain birds, find suitable homes on the broad, treeless, grassy mesas that, lying above ten thousand feet, extend for miles along the range, for, at this southern end the range is already beginning to broaden out into the Rocky Mountain plateau.

The exact locality covered by our list of birds is the core of the extreme southern end of the Rocky Mountains, that is, the north and south section drained by the Pecos River, specifically from the source of the Pecos at the foot of the Truchas Peaks southward to the mouth of the Pecos Cañon at the village of Pecos. To this is added an east and west section seven miles along the foothills on the lower edge of the Transition zone, from Pecos to Glorieta, where the Glorieta divide, on the Santa Fé R. R., separates the drainage of the Rio Grande from that of the Pecos River.

The foothill notes in the list that follows were made before entering the mountains, while the mountain list was made, as stated above, between July 11 and August 24, 1903.

Actitis macularia. SPOTTED SANDPIPER.—Two families of young were found at 8000 feet in the Transition zone where Mr. Henshaw found breeding birds. One brood left the nest on July 15, the other probably a week later. An adult male in beautiful, fresh winter plumage was shot on August 15 by the lake at the foot of Pecos Baldy, at 11,600 feet, and another, August 24, on the Pecos at 7200 feet.

Dendragapus obscurus. DUSKY GROUSE.—Grouse were found throughout the Canadian and Hudsonian zones, but the total number seen by our party during the month that we were in their country was only eleven cocks, nine hens, and six small broods of young. As the birds are supposed to lay from seven to ten eggs and the number of young attributed to four out of the six broods seen was respectively one, two, three, and four, we surmised that the severe mountain hailstorms had depleted the families. Near our camp at the foot of Pecos Baldy, Mr. Bailey discovered a winter roosting tree of the grouse. The tree was on a sheltered part of the wooded slope and was so densely branched that after a prolonged rain the ground beneath was perfectly dry. The earth was strewn with winter droppings, composed entirely of leaves of conifers. Conifer needles had also been eaten by three of the grouse that were taken, under our collecting permit, in July and August, but at this season the birds were living principally on such fresh food as strawberries, bearberries (*Arctostaphylos uvaursa*), shepherdia berries, flowers of the lupine and paint brush, seeds, green leaves, grasshoppers, caterpillars, ants, and other insects. One crop contained twenty-seven strawberries, twenty-eight bearberries, and twelve shepherdia berries, besides flowers, leaves, and insects, while the accompanying gizzard was filled with seeds, green leaves, and insects.

Lagopus leucurus altipetens. SOUTHERN WHITE-TAILED PTARMIGAN.—A cattleman and one of the range riders of the Reserve both reported having seen a few ptarmigan in previous seasons on the highest peaks, but although Pecos Baldy (12,600 feet) was climbed seven times by different members of our party and Truchas (13,300 feet) three times, our anxious search for the birds was not rewarded. It must be said, however, that on several of our ascents the wind was blowing a gale that would have driven most birds to cover. As this is the extreme southern limit of the Alpine zone in the Rocky Mountain system, and as there is a break of approximately thirty or forty miles in the Hudsonian zone between the high peaks of the Pecos Mountains and the Taos Mountains thirty or forty miles farther north, the range sweeping down to 9300 feet in the lower Canadian zone at Taos Pass, it is hardly to be expected that ptarmigan would be abundant on this isolated southern extremity of the range. There are, however, undoubtedly a few of the birds on the southernmost of the high peaks. At the southern end of the gap in the Hudsonian zone, the game warden told us, eleven years ago he found two of the ptarmigan near Mora Pass at an altitude of more than 11,000 feet. We did not succeed in finding any of the birds, however, even in the Taos

Mountains north of the pass, but, convinced that they must be there, Mr. Bailey, on leaving an assistant, McClure Surber, to collect in the region during the winter months, gave him special instructions to hunt for ptarmigan. The last of January Mr. Surber made a two days' snowshoe trip around the high peaks in the neighborhood of Gold Hill, where the snow had thawed and frozen until, as he said, "the surface crust was more slippery than ice." Here he finally discovered a flock of ptarmigan. One of the birds separated itself from the flock and led him up near the top of the peak, to about 12,500 feet he thought, when it lit within shooting distance. In describing it Mr. Surber says, "I was standing on an ice-covered boulder and just as I got a bead on it one of my feet slipped and in trying to save myself I dropped my gun. For a wonder the bird didn't fly, but my gun was about thirty feet below me and I didn't dare wait to get it. So pulling my revolver I fired and killed the ptarmigan." The specimen which, as Mr. Surber remarks, is a "good one in spite of the bullet," is a male in beautiful winter plumage and is now in the Biological Survey collection substantiating the previously vague reports of ptarmigan in New Mexico.

Meleagris gallopavo merriami. MERRIAM TURKEY.—For Colorado, Mr. Drew gives the breeding range of the turkey as 7000 feet, but in Mr. Mitchell's list of the birds of San Miguel County, New Mexico, he states that they are "common from 8000 feet to timberline." In the Pecos Mountains we were told that they were still common at 11,000 feet, but by the time we reached that altitude, as the game warden explained, they were probably on their way down the mountains. At all events, only four were seen by our party. Mr. Vilas, a cattleman of the country, told us that in the fall they go down to the nut pine and juniper mesas in the Glorieta region and, gathering at the few springs that furnish drinking places, are shot by wagon loads by the Mexicans. The only specimen we obtained was taken July 27 at over 11,000 feet. Its crop and gizzard held mainly grasshoppers and crickets, but also grass seed, mariposa lily buds, and strawberries, while its gizzard contained in addition a few beetles.

Columba fasciata. BAND-TAILED PIGEON.—Mr. Henshaw found the pigeons feeding on elderberries and acorns, but in the scarcity of acorns last summer there were few pigeons. Less than a dozen were seen by us in the mountains, though it must be said that we did not do much work in their section. All but two of those seen were at about 10,000 feet on the upper edge of the Transition zone, the others being at 11,400 feet, evidently only flying over. The only specimen secured had nothing but insects, mainly grasshoppers, in its gizzard.

Zenaidura macroura. MOURNING DOVE.—The unmistakable voices of Mourning Doves were heard at Glorieta on July 8.

Cathartes aura. TURKEY VULTURE.—Mr. Henshaw reported the Vulture as common, but we saw only a few of the birds, and most of these at 11,000 feet, when the mammalogists were running a line of meat-baited traps.

Accipiter cooperi. COOPER HAWK.—One was seen near Glorieta on July 4 flying with a small mammal in its claws.

Buteo borealis calurus. WESTERN RED-TAIL.—Red-tailed Buteos were seen about our camps at 8000 and 11,000 feet.

Aquila chrysaëtos. GOLDEN EAGLE.—Several eagles were observed over the highest peaks. A young one was seen soaring over Pecos Baldy August 18, the white base of its tail showing brilliantly in the sun.

Halizæetus leucocephalus. BALD EAGLE.—Two or three Bald Eagles were reported at about 8000 feet on the Pecos August 20.

Falco mexicanus. PRAIRIE FALCON.—A Falcon that Mr. Bailey took to be the Prairie was seen August 14 beating up against a storm, attempting to round the peak of Pecos Baldy.

Falco sparverius phalæna. DESERT SPARROW HAWK.—Near Glorieta a pair of Sparrow Hawks were feeding young inside a cottonwood knot-hole on July 8. Of the few individuals noted in the mountains one was seen August 11 flying over Truchas Peak (13,300 feet) and another August 13 flying over Pecos Baldy (12,600 feet). Twice the hawks were seen disputing with Clarke Crows, once at our Hudsonian camp when the hawk and nutcracker took turns chasing each other out of camp.

Bubo virginianus pallescens. WESTERN HORNED OWL.—The remains of a Horned Owl were found near Glorieta and the birds were heard at 8000 and 11,000 feet, while a feather of one was found halfway up the peak of Pecos Baldy.

Ceryle alcyon. BELTED KINGFISHER.—Mr. Henshaw states that although several kingfishers were seen along the Pecos in the fall they did not breed in the locality, but we found them on the Pecos July 11 and 16 at an altitude of about 7800 and 8000 feet.

Dryobates villosus monticola. ROCKY MOUNTAIN HAIRY WOODPECKER.—Hairy Woodpeckers were noted at different altitudes, from 7400 feet on the lower edge of the Transition zone to 11,600 feet in the Hudsonian zone. The gizzard of a young male shot was full of hard-bodied insects. At 11,600 feet on August 15 a family of grown young were going about feeding themselves, calling and drumming. In watching them the red crown patches of the young were so conspicuous as they turned their heads in pecking at the bark that they suggested a possible advantage as recognition marks. Does a parent coming with grubs distinguish its son from its mate a tree away by the red crown? It is certainly a convenient mark from the foot of the tree.

Picoides arcticus dorsalis. ALPINE THREE-TOED WOODPECKER.—A pair of Three-toed Woodpeckers were feeding young about our Hudsonian camp at 11,600 feet August 14. An old male and one of the brood were seen on the same tree, the young one picking about for itself while its parent dug larvæ out of the live bark and fed them to it. A young *Dryobates* flew down while they were enjoying the meal and finally succeeded in driving them off, although they scolded angrily as they went. The stomachs of two adults and one young were full of the larvæ of tree insects.

Sphyrapicus varius nuchalis. RED-NAPED SAPSUCKER.—*Nuchalis* was seen on the Pecos in the Transition zone at 8000 feet.

Sphyrapicus thyroideus. WILLIAMSON SAPSUCKER.—A pair of *thyroideus*, collected at about 8000 feet, had their stomachs full of ants. The highest altitude at which the birds were seen was 9500 feet.

Melanerpes formicivorus. ANT-EATING WOODPECKER.—A single individual was reported near Glorieta about July 8.

Colaptes cafer collaris. RED-SHAFTED FLICKER.—Flickers were fairly common in the mountains from 7400 to 11,600 feet, where we found a pair feeding young nearly ready to fly on August 16. The adults were then calling vociferously. At 11,000 feet an old bird was feeding full grown young, out of the nest, August 6. At 13,000 feet, in a protected timberline alcove on the south side of Truchas, a flicker was seen on August 11 with a party of migrants.

Phalacroptilus nuttallii. POOR-WILL.—A Poor-will was heard at dusk near Glorieta early in July.

Chordeiles virginianus henryi. WESTERN NIGHTHAWK.—Nighthawks were heard booming near Glorieta about July 8.

Aëronautes melanoleucus. WHITE-THROATED SWIFT.—A single swift was seen flying over the top of Pecos Baldy on July 31. In San Miguel County, Mr. Mitchell says, it is "not common." "Breeds in cliffs during May from 8000 feet to timberline."

Selasphorus platycercus. BROAD-TAILED HUMMINGBIRD.—The Broad-tail was fairly common from 7000 feet at Glorieta to 11,600 feet at the foot of Pecos Baldy, where numbers were seen as late as August 16. Others were noted the second week in August flying over the saddle of Pecos Baldy at 12,000 feet, at timberline on Truchas at 12,300 feet, and going over the peak of Baldy at 12,600 feet. The throat of one shot was full of honey and long-tailed, wasp-like insects. On August 25 two young *platycercus* were taken from a flock of hummingbirds three miles south of Pecos in the juniper and piñon pine belt.

Selasphorus rufus. RUFOUS HUMMINGBIRD.—The large numbers of hummingbirds recorded by Mr. Henshaw were absent from the section of the mountains that we visited. On July 25 we made an eight mile horseback trip to secure a pair that Mr. Bailey had located at some flowering spirea and holodiscus bushes at 10,200 feet. Later on we found the birds as high as 12,600 feet, above timberline, on Truchas Peak, and saw one flash across the saddle of Baldy at 12,000 feet. The species does not occur at all in Mr. Mitchell's list of the birds of San Miguel County, which indicates at least that it is not abundant on the east slope of the range in this region. The only large gathering of hummingbirds that we encountered was on August 25 at the southern base of the mountains, three miles south of Pecos. Here a patch of thistles in the bottom of a dry wash had attracted about thirty hummingbirds of various species. As they were nearly all females or young we could not tell what they were, but there was one adult male *rufus*, and young of *platycercus* and *calliope* were both taken.

Stellula calliope. CALLIOPE HUMMINGBIRD.—Two specimens were secured during the summer, one at 11,000 feet on August 8, and one three miles south of Pecos on August 25.

Tyrannus vociferans. CASSIN KINGBIRD.—Reports of *vociferans* were brought us by McClure Surber from Glorieta on July 8, and from 8000 feet on August 19.

Myiarchus cinerascens. ASH-THROATED FLYCATCHER.—In the juniper belt near Glorieta *Myiarchus* was found about July 8.

Sayornis saya. SAY PHOEBE.—On August 14 Mr. Bailey found a Say Phoebe on an open ridge at 12,000 feet, where *Myadestes*, *Anthus*, and *Otocoris* had been found previously. At Glorieta one had been seen around an adobe about July 8.

Nuttallornis borealis. OLIVE-SIDED FLYCATCHER.—*Nuttallornis* was found in the Canadian and Hudsonian zones from Willow Creek at 7800 feet to the foot of Pecos Baldy at 11,600 feet, its familiar call often coming from the tip of a picea spire.

Contopus richardsonii. WESTERN WOOD PEWEE.—*Richardsonii* was seen in the Transition zone from 7000 to 8000 feet.

Empidonax difficilis. WESTERN FLYCATCHER.—Common from 8000 to 11,000 feet, evidently breeding at 11,000 feet on July 15. Mr. Henshaw saw young accompanied by the parents July 19, and on Jack Creek, at 11,000 feet, Mr. Bailey found a nest containing four young on August 5.

Otocoris alpestris leucolæma. DESERT HORNED LARK.—At least half a dozen Horned Larks, among them full grown young, were found with a band of Pipits on a broad open slope at 12,000 feet. They were discovered on July 28, on our first visit to timberline, and found in the same place a number of times afterwards. Two specimens were secured which Mr. Oberholser identified as *leucolæma*.

Pica pica hudsonia. BLACK-BILLED MAGPIE.—Four magpies and three or four ravens were seen August 6 sitting on a corral on the open mesa at 10,400 feet. The carcass of a cow was evidently the attraction and the ravens were trying to drive off the magpies when discovered. On being disturbed the birds all flew off down into the timber.

Cyanocitta stelleri diademata. LONG-CRESTED JAY.—*Cyanocitta* was found from the lower edge of the Transition zone yellow pines through the firs and spruces of the Canadian zone, but at 11,000 feet it was largely replaced by *Perisoreus*. At 7000 feet, near Glorieta, about July 8, a family of six were seen going around together. At 8000 feet, on July 16, an old jay brought its brood into the bushes on the edge of camp, running out into the grass a few yards from our tent to pick strawberries for them. On August 21, at the same altitude, we found another pair of jays going about with their young.

Aphelocoma woodhousei. WOODHOUSE JAY.—On the Pecos *woodhousei* was found as high as 7000 feet, for although the cold slopes of the cañon walls are pineclad at this altitude, the warm slopes are covered with Upper Sonoran junipers and nut pines.

Perisoreus canadensis capitalis. ROCKY MOUNTAIN JAY.—*Perisoreus* was common from 11,000 to 11,600 feet. At 11,000 feet a family of young was found out of the nest on July 23, and on August 4 a full grown young one was caught in a meat trap. Two old birds were also caught in traps baited for martins and foxes, although the traps were partly covered up in the daytime to protect the jays. At this camp the birds stopped only as they went by and did not come within several rods of camp. When we moved up to the foot of Pecos Baldy, however, camping among the dwarf spruces of the Hudsonian zone, the jays flocked around us, joining us at meals with characteristic fearlessness. The only wild food that we saw them eat was toadstool. On our way down the mountains, August 17, we found *Perisoreus* as low as 10,800 feet, near the junction of the Canadian and Transition zones.

Corvus corax sinuatus. AMERICAN RAVEN.—A family of ravens was seen near Glorieta July 10, and another at the foot of Pecos Baldy, 11,600 feet, on July 23. Other ravens were seen flying over the peak. At our 11,000 foot camp *sinuatus*, like the jays and vultures, was attracted by the line of meat baited traps, going so far as to spring some of them and take the bait.

Corvus americanus. CROW.—Although Mr. Henshaw thought the Crows did not breed at this altitude, a few were seen on the Pecos near El Macho, at 7200 feet, and on July 16 two or three families were noted five or six miles above El Macho at about 7600 feet, squawking young being led about by their parents.

Nucifraga columbiana. CLARKE NUTCRACKER.—At our Canadian zone camp a few nutcrackers stopped in the treetops to inspect us in passing, but at our Hudsonian camp they came familiarly for food with the Rocky Mountain Jays. While not so tame as *Perisoreus* they would come within two or three rods of us. They abounded at this level and frequented the dwarf pines near timberline above us. One of the birds was seen shooting down over the top of Pecos Baldy in characteristic fashion. In the woods two of the nutcrackers were seen by Mr. Bailey running up and down a log bordered by blooming larkspurs, chasing sphynx moths that were feeding from the flowers. The moths were darting about and Mr. Bailey did not see any caught. On leaving the mountains in August we found the nutcrackers in the pines as low as 8000 feet, and in rounding the south end of the range, on the way to Las Vegas, the last of August we saw a few scattered individuals as low as 6000 feet in the piñon pine and juniper belt.

Cyanocephalus cyanocephalus. PIÑON JAY.—At 7000 feet, on the upper edge of the Upper Sonoran zone, a large flock of Piñon Jays was seen flying high overhead on August 11, and on August 12 a flock of six or eight wanderers was found feeding on the ground at timberline, 12,300 feet, on the side of Truchas Peak.

Sternella magna neglecta. WESTERN MEADOWLARK.—Mr. Mitchell says the meadowlark breeds as high as 8000 feet in San Miguel County,

but we saw it last a few miles north of Pecos, as in following up the Pecos Cañon there were no suitable breeding grounds for it.

Hesperiphona vespertina montana. WESTERN EVENING GROSBEEK.—Along the Pecos at about 8000 feet Evening Grosbeaks were found near the middle of July going about in flocks and feeding on the ground around roadside springs. The birds, as we inferred from their actions and as their stomach contents proved, were eating small insects which they picked up from the surface of the ground or dug up from under roots or stones. When first discovered they were so tame that we could get within a few feet of them. In a flock of twenty or thirty males only two females were seen. In going up the mountains we found a few pairs at about ten thousand feet near the junction of the Transition and Canadian zones. On our return down the mountains in August only one or two individuals were noted where the large flocks had congregated in July, and as grosbeak voices were heard below Pecos we inferred that the birds had gone down into the juniper and piñon pine country to gather berries.

Pinicola enucleator montana. ROCKY MOUNTAIN PINE GROSBEEK.—Two pairs of Pine Grosbeaks were seen in the Canadian and Hudsonian zones, and one family with grown young was found by Mr. Bailey on August 14 near the Truchas lakes at the head of the Pecos River at 12,000 feet. Both adult and young were taken. The crop and gizzard of the young were stuffed full of small white oval seeds, while the stomach of the adult contained the same seeds with the addition of a few spruce needles, a spruce flower, and a small green caterpillar.

Carpodacus cassini. CASSIN FINCH.—In a flock of Evening Grosbeaks feeding at a spring on July 15, we discovered a solitary male Cassin Finch, the only one seen during the season.

Carpodacus mexicanus frontalis. HOUSE FINCH.—In Colorado the House Finch breeds up to 8000 feet, but on the east side of the Las Vegas range Mr. Mitchell did not find it "to any great extent"; in the Pecos Mountains Mr. Henshaw did not find it at all, and we saw it only at the base of the range between Pecos and Glorieta.

Loxia curvirostra bendirei. BENDIRE CROSSBILL.—At 11,000 feet the crossbills were common, flying about among the cone-laden spruce tops and, hunger appeased, stopping to sing their quaint, pleasing song. At 11,600 feet they were occasionally heard flying over, and on our way down the Pecos, August 21 and 22, they were seen at 8000 feet and again at 7400 feet.

Astragalinus psaltria. ARKANSAS GOLDFINCH.—Goldfinches were found in the cottonwoods at Glorieta July 7.

Spinus pinus. PINE FINCH.—Siskins were seen from 7500 to 11,600 feet, but they were most abundant at 11,000 feet, where they were constantly singing and flying about in small squads, which were probably families. On August 17, as we came down the mountains, a family of young was found out of the nest at 10,400 feet.

Poœcetes gramineus confinis. WESTERN VESPER SPARROW. — Mr. Henshaw secured a single individual which, he says, "was doubtless merely a migrant which had strayed from its proper territory lower down on the plains." The broad grassy mesas of the upper parts of the mountains, however, are ideal breeding grounds for the Vesper Sparrow, and on one of these meadows, at 10,400 feet, the birds were found singing a number of times between July 25 and August 17, one being taken on July 25. In Colorado the Vesper Sparrow breeds commonly to 9000 feet, and sometimes up to 12,000 feet.

Coturniculus bairdii. BAIRD SPARROW. — On August 11 Mr. Bailey took a Baird Sparrow on one of the open mesas near timberline. Others were secured September 2 on the high plains north of Las Vegas.

Zonotrichia leucophrys. WHITE-CROWNED SPARROW. — Mr. Henshaw states that the White-crown is "present only as a rare migrant, it being too far south for the species to breed." Of course it is now known that the breeding range extends, as Mr. Ridgway gives it, "southward to New Mexico and Arizona (San Francisco Mountains)," but had Mr. Henshaw visited the higher levels of the Pecos Mountains he would have extended the range himself, for he would have found the birds abundant breeders there. As in the Sierra, *leucophrys* is one of the commonest and most characteristic birds of the Hudsonian zone. The birds were singing up to timberline on Pecos Baldy as late as the middle of August, and the willows at the base of the peak were alive with them. A molting adult was found carrying food on August 8. In the willows bordering Jack Creek, at 11,000 feet, a nest contained one egg and two young nearly ready to leave the nest on July 27. In watching the parent birds I was struck by their use of their crest. We had been told of a bird with a white crown and I found that when wanting to attract attention, to draw one from the nest, *leucophrys* often spreads its crown so wide that the black bordering stripes might easily be overlooked, the white then serving as a good recognition mark. But, on the other hand, when the birds wanted to steal unobserved through the willows to the nest, they lowered the crown so flat that the black and white lines were of almost equal width.

Spizella socialis arizonæ. WESTERN CHIPPING SPARROW. — Mr. Henshaw found *arizonæ* "an abundant summer resident" of the Transition zone, and we found a nest with nearly grown young at Glorieta July 8, and found the birds common at 11,000 feet, where young, out of the nest, were being fed on July 23. The sparrows were fairly common in the Hudsonian zone the second week in August, and were seen August 11 at timberline, 11,300 feet, on the south side of Truchas.

Junco dorsalis. RED-BACKED JUNCO. — A single specimen of *dorsalis* was taken at 8000 feet on July 13. It was taken near a nest from which we had flushed a Junco the day before.

Junco caniceps. GRAY-HEADED JUNCO. — Juncos were breeding abundantly at 11,000 feet, nests being found everywhere in the open. On July 22 a nest was found containing partly feathered young; on July 24 one

nest of three eggs, and two broods out of the nest were found; on July 25 young were seen going about with their parents; on July 30 a nest was found with one egg and newly hatched young; on July 31 a nest of four eggs was discovered; on August 6 an old bird was seen feeding young in a tree; August 7 a nest was found with four eggs, and on August 15 an old Junco was seen collecting food. All of the nests were on the ground, completely hidden by tufts of grass or bunches of weeds, being discovered only by flushing the brooding bird. When the Junco is not flashing its white tail feathers its rufous back may well serve its relatives as a recognition mark, especially in the dull light on the edges of clearings where other small birds gather.

Melospiza lincolni. LINCOLN SPARROW.—This was the only *Melospiza* found in the mountains, although we were on the lookout for *montana*, and in San Miguel County Mr. Mitchell says it breeds from 7000 to 9000 feet. Mr. Henshaw says that *lincolni* "evidently does not occur in summer," but we found it breeding in the higher parts of the mountains, both on Jack Creek at 11,000 feet, and by the lake at the foot of Pecos Baldy at 11,600 feet. Young were being fed out of the nest at 11,000 feet on July 29.

Pipilo maculatus megalonyx. SPURRED TOWHEE.—Mr. Henshaw found only one or two pairs of *megalonyx* and we saw the bird only once or twice in the mountains, but found it fairly common in the foothills between Pecos and Santa Fé on the lower edge of the Transition zone.

Pipilo fuscus mesoleucus. CAÑON TOWHEE.—*Mesoleucus* is one of the common cañon birds of the Upper Sonoran juniper and nut pine belt and follows its zone up the Pecos to its limit at 7200 feet.

Oreospiza chlorura. GREEN-TAILED TOWHEE.—We obtained a single specimen of *chlorura* on July 13 at 8000 feet, and Mr. Henshaw found one brood and saw a few migrants.

Zamelodia melanocephala. BLACK-HEADED GROSBEEK.—A male grosbeak was taken July 15 at 8000 feet, one was seen July 20 at 8700 feet, and a female was obtained at about 10,000 feet, near the upper limit of the Transition zone.

Guiraca caerulea lazula. WESTERN BLUE GROSBEEK.—A Blue Grosbeak was reported on August 6 about eight miles north of Pecos in the Upper Sonoran zone. Another was seen earlier in the season between Glorieta and Pecos.

Piranga ludoviciana. WESTERN Tanager.—At 8000 feet we found a pair of tanagers feeding young on the edge of camp July 16. The song and call notes were constantly in our ears. When the female was away the male would sit on a branch and call *pit-ic, pit-ic, pit-ic* by the half hour. He would call in the same way when hunting for food, moving slowly and quietly over the cottonwood branches. The female often gave a three syllabled call of *pit-er-ick, pit-er-ick*. A nestling that I succeeded in catching in my hand, much to the temporary distress of the old birds, was, as Mr. Ridgway says, marked much like the female. Its upper

parts were olivaceous and the wings were crossed by two yellowish bars. The throat, but not the chest, was streaked, and the belly was whitish, its median line and the under tail coverts being bright yellow. Tanagers were seen on July 19 at 8700 feet and July 25 at 10,200 feet, on the upper edge of the Transition zone. Before this they had been found in the foothills between Santa Fé and Glorieta. On August 27 we saw one as low as 6350 feet at the foot of the pine-covered Bernal mesa.

Progne subis. PURPLE MARTIN.—Martins were found near Glorieta July 10.

Petrochelidon lunifrons. CLIFF SWALLOW.—Seen between Glorieta and Pecos on July 4.

Hirundo erythrogastra. BARN SWALLOW.—At 7200 feet Barn Swallows were seen on August 24, and they were common about Mexican adobes at the base of the mountains during the summer.

Tachycineta thalassina lepida. NORTHERN VIOLET-GREEN SWALLOW.—*Tachycineta* was found from near Glorieta at the base of the mountains up to 11,000 feet, but was most abundant at 8700 feet. Near Glorieta on July 10 we found the Violet-greens nesting in cottonwoods; at 8700 feet on July 19 they were evidently breeding in crevices in the rocks, flying about the brow of a cliff in great numbers; and on July 25 we found a large community of them breeding in an aspen grove on the mesa at 10,300 feet. A grown young was secured in this place on August 14. Mr. Henshaw found the swallows principally in the pine woods.

Vireo gilvus swainsoni. WESTERN WARBLING VIREO.—At Glorieta the Warbling Vireo was singing in the cottonwoods on July 7, and at 8000 feet one was singing and carrying food on July 15. Others were found as high as 10,300 feet in the poplars on the mesa.

Vireo solitarius plumbeus. PLUMBEOUS VIREO.—Mr. Henshaw speaks of *plumbeus* as "rather common in summer," being "almost exclusively restricted to the pines"; but we found it only on the lower edge of the pine belt at the base of the mountains in a cottonwood grove near Glorieta.

Helminthophila virginiaë. VIRGINIA WARBLER.—Mr. Henshaw was surprised at the absence of the Virginia Warbler, which "breeds abundantly in middle Colorado," and suggested that "it may possibly summer in the foothills." That this is the case we proved by taking a specimen on July 10 near Glorieta on the lower edge of the Transition zone.

Helminthophila celata. ORANGE-CROWNED WARBLER.—Taken at about 8000 feet on the Pecos July 16.

Helminthophila celata lutescens. LUTESCENT WARBLER.—Taken at 8000 feet on August 19.

Dendroica auduboni. AUDUBON WARBLER.—These warblers were found from 7000 to 11,600 feet, where, on August 12, they were going about in fall flocks of Juncos, Kinglets, and Warblers.

Geothlypis tolmiei. MACGILLIVRAY WARBLER.—Mr. Henshaw, while expecting to find *tolmiei* breeding, saw it only as a migrant late in August, but we secured a specimen on July 15 on a branch of the Pecos at 8000 feet, so it doubtless breeds in the vicinity.

Wilsonia pusilla pileolata. PILEOLATED WARBLER.—Mr. Henshaw says, "So far as we could ascertain, this bird did not breed in the locality," but higher up the mountains, at 11,000 feet, on July 23, we found it feeding young in the willows along Jack Creek. The parent bird was, at the time, in the middle of its molt. When we came down the mountain the latter part of August we found *pileolata* in the alders along the streams in the same surprising numbers that Mr. Henshaw had noted.

Anthus pensilvanicus. PIPIT.—Instead of the Ptarmigan and Leucosticte that we had hoped to discover on the peaks, we found the Pipit, the one Alpine bird. This was not surprising, as the snow had melted back to small patches on the cold slopes in time to give it an open breeding ground. From a little below timberline we found the birds ranging to the highest peaks, actually encountering them in a fierce wind within fifty feet of the summit of Truchas, at an altitude of 13,250 feet. From the top of Pecos Baldy another day I discovered, high in the air, a Sparrow Hawk pursued by a Pipit. As this was on the thirteenth of August the Pipit was probably guarding his brood, for we had found young being fed as late as July 28. The breeding ground where we discovered them was a broad grassy slope, an ancient 'burn' near timberline where *Otocoris* was going about with grown young. Some of the Pipits had food in their bills and they did individually what they do in flocks after the breeding season,—rose from the ground, flew out and circled back, uttering their plaintive *cheep*. In this case they often lit on old gray stumps and logs. On July 31 we found the birds on both sides of the knifeblade rocky ridge connecting the east and west peaks of Pecos Baldy flying about cheeping, blown by the wind, and lighting on the rocks and tipping their tails; but though they acted most suspiciously, we did not succeed in finding nests or young.

Cinclus mexicanus. WATER OUZEL.—The Ouzel was seen on the Pecos from 7200 to 8700 feet in July and August. At 8700 feet we left the Pecos, following up Jack Creek to the foot of Pecos Baldy. This stream probably had too few cascades to suit the ouzels, but on the north slope of Baldy, at 10,000 feet, Mr. Bailey again encountered them. The gizzard of one collected was full of small insects.

Salpinctes obsoletus. ROCK WREN.—Mr. Mitchell says that the Rock Wrens breed "most commonly from 8000 feet down, and although a few individuals were seen by us in the mountains, one being met at 12,550 feet, fifty feet from the top of Pecos Baldy we missed the friendly little fellows in the high country, for they had met us at every turn along the sandstone of the low country.

Troglodytes ædon aztecus. AZTEC WREN.—On July 10 we found two wren nests in holes in cottonwoods at our Glorieta camp, and on July 14, at 8000 feet, were shown a family of nearly fledged young which the children of the range rider had rescued from a snake that climbed to its nest. On August 9, wrens were singing at 11,600 feet.

Certhia familiaris montana. ROCKY MOUNTAIN CREEPER.—Young

creepers were seen at 11,600 feet on August 14 and 16, and one was taken at 8000 feet on August 18.

Sitta carolinensis nelsoni. ROCKY MOUNTAIN NUTHATCH.—In going about the mountains we thought a number of times that we detected the notes of *nelsoni* at a distance, and we were doubtless right, for Mr. Henshaw found them breeding abundantly in the pines. They were, moreover, taken at our Glorieta camp on the lower edge of the yellow pines as well as on pineclad mesas on the plains.

Sitta pygmæa. PYGMY NUTHATCH.—During July and August the Pygmy was found throughout the limits of the Transition zone from 7400 to 9800 feet.

Bæolophus inornatus griseus. GRAY TITMOUSE.—As *griseus* is a common bird of the piñon pine and juniper belt and was found in the Glorieta region, it would doubtless have been found on the Upper Sonoran slopes of the Pecos cañon had we stopped to work them.

Parus atricapillus septentrionalis. LONG-TAILED CHICKADEE.—A family of nine were seen August 17 at 8000 feet, and one was taken at about 10,500 feet. Its gizzard was filled with minute eggs and some insects.

Parus gambeli. MOUNTAIN CHICKADEE.—While *septentrionalis* was seen only twice, *gambeli* was common at Glorieta and on the mountains in the Canadian and Hudsonian zones.

Psaltriparus plumbeus. LEAD-COLORED BUSH-TIT.—Like *Bæolophus*, a typical bird of the juniper and nut pine country, *Psaltriparus* was found in the Glorieta foothills, and was undoubtedly on the Upper Sonoran slopes of the Pecos Cañon.

Regulus satrapa. GOLDEN-CROWNED KINGLET.—A young *satrapa* in pinfeathers was taken July 31 on Pecos Baldy. As this gives a breeding record it makes a long southward extension of the breeding range.

Regulus calendula. RUBY-CROWNED KINGLET.—On July 21, when we camped in the spruces at 11,000 feet, the Kinglets were in the height of their song, their cheery round being heard all through the day as they made their circuits of the spruce tops above camp. By August 1 their songs were much less in evidence, probably for good family reasons. By August 9 their songs were so rarely heard as to be notable, and before we left the foot of Pecos Baldy, August 17, the young were flying about quite independently.

Myadestes townsendii. TOWNSEND SOLITAIRE.—A pair of *Myadestes* was seen about July 15 at 8000 feet, and a grown young one was shot July 28 at 11,000 feet. On the same day a nest with four fairly fresh eggs was found at 12,000 feet. The nest was on the same grassy ridge where *Anthus* and *Otocoris* were flying about. As we rode along on horseback the bird flew from under an old gray log at our feet, and on dismounting we found the nest on the ground roofed over by a cavity burned in the log just about large enough to give head space to the Solitaire. The nest was made wholly of grass and weed stems and lined with fine grass. On the side of Pecos Baldy *Myadestes* was seen above 12,000 feet, and on Truchas above timber-

line on straggling dwarf spruces at 12,600 feet. At our Hudsonian zone camp at 11,600 feet we saw a number of the birds up to the time of our departure, on August 17. On our way down the mountains we found it as low as 8000 feet, whether having bred there or having come down after the cold storms we could only surmise.

Hylocichla guttata auduboni. AUDUBON HERMIT THRUSH.—When we camped in the spruces at 11,000 feet Hermit Thrushes were singing in chorus in such unusual numbers that we called the place *Hylocichla Camp*, but by August 1 the thrushes had almost stopped singing. On July 23 we found a young bird out of the nest, and from that time on encountered bob-tailed young in the woods until August 15, just before our departure for the lowlands. The stomach of a thrush shot contained insects and a few berry seeds, probably strawberry.

Merula migratoria propinqua. WESTERN ROBIN.—Mr. Henshaw says the Robin "was not detected breeding, although it probably summers here." During our stay the birds were found from Pecos to the foot of Pecos Baldy. At 8000 feet, on July 15, we found young being fed out of the nest; on July 16 we found a pair just about finishing a nest; on July 23 a nest was seen with eggs at 11,000 feet; on August 20, young were found being fed in the nest at 8000 feet. On August 16, at 11,000 feet, we saw a tailless old bird in the midst of its molt.

Sialia mexicana bairdi. CHESTNUT-BACKED BLUEBIRD.—On July 10 *bairdi* was found nesting in a cottonwood near Glorieta. In the mountains it was seen as high as 10,200 feet.

Sialia arctica. MOUNTAIN BLUEBIRD.—Mr. Henshaw says, "Apparently the *Sialia arctica* does not breed here"; but Mr. Mitchell gives it as breeding "up to 9000 feet" on the east of the range, and we found it common at Glorieta July 8 and on the open mesa at 10,300 feet, where we found a nest in an aspen on July 25. At the same time families of young and old were going about together up at 11,000 feet. By August 5, numbers of Bluebirds, with Flickers, Chipping Sparrows, and Juncos were wandering about in families, the woods as well as the meadows being filled with birds. On August 11 we found a flock of the Bluebirds with Chipping Sparrows and Flickers at 12,300 feet, on a protected slope in the dwarf evergreens of timberline on the south side of Truchas.