SUMMER BIRDS OF THE GOTHIC AREA, GUNNISON COUNTY, COLORADO[1]

BY DOROTHY ANDERSON KNOX[2]

Plates 2, 3

SOME years ago Mr. Edward R. Warren of Colorado Springs, Colorado, published two articles in THE AUK (1916, 1928) on the birds of the Elk Mountain region of Gunnison County in western Colorado. These papers, so far as I have been able to discover, are the only records in print of the ornithology of this rugged and interesting section of Colorado.

It was the present writer's privilege to spend some six weeks during the summer of 1936 studying the birds of the north-central part of Gunnison County in the Elk Mountain Range. Although this study does not pretend to be as inclusive as that made by Mr. Warren, it seems that the scarcity of information concerning birds of this region lends it certain value.

How I came to attempt this study would perhaps lend a digressive introduction to the more scientific data to be presented herein. One of my former colleagues in the Department of Biology at Hood College, Dr. Mary Howe Schott, has been for some time a member of the staff at the Rocky Mountain Biological Station situated near Crested Butte, Colorado. This station, or laboratory, is owned and administered by an independent corporation whose members are, for the most part, scientists from colleges and universities of several states. The laboratory provides summer courses in biological sciences to both undergraduate and graduate college folk. A number of the latter group are carrying on research there in ecology, botany, mammalogy, and embryology. It was at Dr. Schott's suggestion that, since very little work had ever been done on the birds of that region, I should undertake a bird survey at the laboratory and, if possible, establish a bird-banding station there. The idea of working in a territory so little known to ornithologists appealed to me immensely, and plans were made to carry out these suggestions.

The idea met the approval of the U. S. Biological Survey and the Conservation Department of Colorado and bird-banding permits were soon granted.

[1] The present paper was sent to the late Dr. Glover Allen in 1937 at a time when he was not at his office to receive it, and, apparently, it could not be found thereafter. It has since come to light among other papers delivered to the present editor and with assurances from the author that publication is still desired, is presented herewith.—Ed.

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I arrived at the laboratory the last week in June to find that I was truly in a naturalist's paradise. The station occupies all that remains of the once thriving gold- and silver-mining town of Gothic, situated ten miles northwest of the town of Crested Butte. The exact geography of the Elk Mountain Range has been very adequately described by Mr. Warren in his first paper, so I shall not repeat it here. I should like, however, to give a rather detailed description of this small region which I studied, so that the reader may more fully understand the topography of the places referred to later.

Gothic nestles near the northwestern end of a long, fertile, meadowed valley through which the East River flows a serpentine course. This valley slopes upward from an altitude of not over 8,900 feet at its southern end to 9,500 feet at Gothic. It lies entirely within the boundaries of Gunnison National Forest. The boundaries of this valley are well marked by a giant stockade of majestic, multicolored, mountain peaks: Crested Butte Mountain to the south, Snodgrass, Gothic, and Baldy mountains to the west and northwest, and Avery, White Rock, Virginia, and Red Mountains to the east. All of these rise to alpine summits from 12,000 to 13,500 feet high.

Ecologically, this territory may be divided into the following life zones: Montane or Transition, altitude from 6,000 to 8,000 feet; Canadian, 8,000 to 10,500 feet; Hudsonian, 10,500 to 11,500 feet (timberline is found near the upper limit of this zone, the extreme limit of which is usually characterized by a strip of very dwarfed, gnarled spruce trees which grow in a peculiarly matted formation called Krumholtz); and Arctic-Alpine, which extends from 11,500 feet upward.

The dominant forest growth, which extends from the valley up to timberline, is Engelmann spruce, Douglas fir, aspen, and willow. Of these, the Engelmann spruce is the most abundant. Of the herbaceous plants, fungi, and mosses, there is seemingly an endless variety. In fact, variety in all things is what makes this region so intriguing. Within a five- to ten-mile radius in any direction, one may climb from the flower-carpeted meadows of the Canadian Zone up to the snows and sparse, stunted vegetation of the Arctic-Alpine Zone above timberline, or one may go lower to a typical Transition-Zone locale. In either case, one is tremendously impressed by the attendant changes in soil, rock formation, water supply and drainage, temperature, humidity, and altitude. Such diversity of habitat gave promise of abundant and varied plant and animal life—a promise generously fulfilled as the weeks passed.

(Upper figure) ROCKY MOUNTAIN BIOLOGICAL STATION; LOOKING EAST TOWARD CRESTED BUTTE MOUNTAIN, GUNNISON COUNTY, COLORADO.
(Lower figure) SOUTHERN SLOPE OF GOTHIC MOUNTAIN.

As I engaged in the ambitious task which I had set for myself, I began to realize that my mental equipment for such an undertaking was so limited as to be humorous. I was quite unfamiliar with western species of birds, since all of my rather limited experience in bird banding and scientific bird study had been confined to eastern states. Nor was there an ornithologist at the laboratory to whom I could look for assistance. All of this, however, but gave the problem that much more appeal, even though at the same time it made me realize that the work would have to be done with extreme care if the data obtained were to have any value.

The first objective, obviously, was to become familiar with western species. This was of necessity painstakingly slow work, for absolute accuracy in identification is required before a bird may be banded with a Biological Survey band. Several birds had to be released from the traps unbanded because I did not feel sufficiently sure of their identification. By dint of many repeated observations, I became familiar with some fifty species, most of which were found within a ten-mile radius of the laboratory.

So far as my next objective was concerned (*i.e.*, the establishment of a bird-banding station), the greatest difficulty was encountered in trapping the birds. I was equipped with both ground and tree types of wire traps, but only one of these, a warbler trap baited with running water, was at all successful. The other traps were all baited with grains, fruits, nuts, bread crumbs, and suet. Due to the superabundance of ground squirrels, chipmunks, and field mice, it was virtually an impossibility to keep bait of this sort in the traps for any length of time. The rodents, unlike the birds, were entirely unafraid of the traps, and stole the bait as regularly as I put it out. Remedies for this situation have been suggested, and I hope at some future time to try again and hope for better success. Frequently, seated at a distance, I watched a trap through my binoculars. A number of birds would approach the trap, and hop all around and over it, eating the grain which was outside (providing the squirrels had not arrived first). Very few, however, would venture within. The reason for this I could never quite fathom. It may have been the way the trap was constructed, or it may have been simply that the birds of this wild, uninhabited region were much less accustomed to man-made feeding boxes than are birds which live closer to human habitations. Furthermore, a great abundance of natural food, of both animal and vegetable types, doubtless helped distract them from this more artificial bait. Despite all this, a few birds were caught and banded, and

I feel that at least a start has been made toward the realization of my goals. Perhaps the most valuable data I have to submit is the list of species identified—a list to serve, along with Mr. Warren's, as the beginning of a much-needed check-list for this remote region.

To further reduce the number of errors and points of doubt in these data, I have discussed some of my observations with Mr. Robert Niedrach, Curator of Birds at the Colorado Museum of Natural History, at Denver, and also with his associate, Mr. Robert Potts. Mr. Potts, incidentally, has assisted Mr. Warren in some of his work in this territory, and they both visited our station briefly shortly before I left. Thanks to the courtesy of Mr. Niedrach I was able to check my notes with the collection of bird mounts and skins at the above-mentioned museum. I should like here to extend my appreciation to these two men for the many helpful suggestions they gave me.

Since my banding permits applied only to non-game birds, and my interests lay for the most part in this group, I spent very little time studying or even attempting to identify the game birds and birds of prey. Of those orders, only such species as happened to come within my range and were easily identified, have been included here. Following is the list of species identified, together with whatever field notes I deemed interesting or valuable.

AMERICAN BITTERN, *Botaurus lentiginosus.*—Within sight of the intersection of the Pittsburg Trail with the Crested Butte-Gothic road there is a very marshy flat. In passing this spot on several occasions, I saw a Bittern standing at the edge of this marsh. It was always seen at or near the same place and was always alone. Whether or not there may have been others inhabiting this same place, I do not know, as I never had much opportunity to investigate the area.

WILSON'S SNIPE, *Capella delicata.*—My only record for this was of one which I saw on the evening of August 11 at the edge of a small marsh near Gunnison. Although I saw none of them, some of the students at the station said they had seen birds which answered to this description not far from our camp.

SPOTTED SANDPIPER, *Actitis macularia.*—Several of these were observed whenever we visited any of the nearby lakes or ponds. At Emerald Lake, a well-named gem of a mountain lake lying at an altitude of approximately 10,000 feet and situated about five miles northwest of Gothic, Spotted Sandpipers were numerous and apparently were summer residents.

KILLDEER, *Oxyechus vociferus vociferus.*—A few of these were observed in and near the town of Crested Butte. They did not seem to be common.

DUSKY GROUSE, *Dendragapus obscurus obscurus.*—On July 5, a male Dusky Grouse fluttered to the ground directly in front of two of our staff members at the laboratory, giving every indication of being badly injured. They easily caught it and brought it to me. I examined it carefully, found no sign of injury, so released it. This was the first of this species I had seen. Later I saw others frequently in the valley between Gothic and Crested Butte.

WESTERN MOURNING DOVE, *Zenaidura macroura marginella.*—Mr. Warren (1916) reports that in 1915 this species was rare in the vicinity of Hillside Ranch, which is not far from Crested Butte. I noted that these doves were numerous in that vicinity when I was there.

WESTERN RED-TAILED HAWK, *Buteo borealis calurus.*—Fairly common throughout this area. I saw them in the chaparral country near the base of Mt. Marcellina, which is due west of Crested Butte, and they were occasionally observed around Gothic.

GOLDEN EAGLE, *Aquila chrysaëtos canadensis.*—Frequently observed soaring above us. I obtained an exceptionally good view of one on an afternoon when I was observing some warblers. I was hidden among some low aspens on the crest of a moraine. Happening to look up, I saw an eagle soaring slowly at some distance from me, but much closer to the earth than usual. I watched it through my binocular as it alighted in the top of a very tall, dead spruce. As it perched there, two Sparrow Hawks dashed out from somewhere and flew frantically at and about it for some time, obviously trying to harry it from the vicinity. To all of their pygmy efforts, the eagle paid majestic indifference. After resting there for some five or ten minutes, it soared casually off as it had come. The Sparrow Hawks followed it for a short distance, then returned to their own bailiwick, convinced, apparently, that the eagle had moved on. It was a thrilling little scene to watch.

DESERT SPARROW HAWK, *Falco sparverius phalaena.*—Very common throughout this region, especially in Transition and Canadian zones.

WESTERN BELTED KINGFISHER, *Megaceryle alcyon caurina.*—The only Kingfisher I saw was near Gunnison on August 11.

BATCHELDER'S WOODPECKER, *Dryobates pubescens leucurus.*—This species was not common in the Gothic region, but a few were observed.

RED-NAPED SAPSUCKER, *Sphyrapicus varius nuchalis.*—This was the most common woodpecker found in the region. We found two nesting pairs in the aspen groves above camp. Both these nests contained young birds in July.

RED-SHAFTED FLICKER, *Colaptes cafer collaris.*—A common summer resident at Gothic.

WESTERN NIGHTHAWK, *Chordeiles minor henryi.*—The first time I saw any Nighthawks was on the evening of July 29 at a look-out point on the Black Canyon near Curecanti, at an altitude of about 7,800 feet. There were a number of them flying about the canyon, feeding on the wing. On August 6 I observed a few of them circling over our camp at Gothic. I had not seen them there previously, and they did not seem to be as numerous at that altitude as in lower country.

BROAD-TAILED HUMMINGBIRD, *Selasphorus platycercus platycercus.*—This was the most common species of hummingbird around Gothic. Numbers of them were seen daily around our camp. One of the most interesting observations which I made of this species was the spectacular display of aëronautics put on by the males, apparently as part of their courtship behavior. The female would sit quietly on a branch somewhere, and a male would suddenly zoom up past her, so close as nearly to knock her from her perch, and straight on upwards until he was but a speck in the sky. Then he would turn, and in a fast 'power dive' would come to earth like a bullet, not breaking his head-on descent until close to the ground, when he would pull himself out of this dive and again climb and dive, uttering all the while a sort of clicking, high-pitched, metallic note. Occasionally, by way of variation, he would do a series of figure-eights and double loops, but his favorite performance seemed to be these great U-shaped dives. One morning I watched two males apparently vying with each other in an attempt to 'show off' before a rather indifferent female. It was a truly spectacular display, for it seemed that each bird nearly exhausted his repertoire of aërial stunts.

RUFOUS HUMMINGBIRD, *Selasphorus rufus.*—I saw none of this species during the first few weeks I was stationed at the laboratory. I identified the first one, a male, on July 23, and from then on I saw them daily. One pair appeared to be nesting in some willows at the edge of a meadow in camp, but I did not succeed in finding their nest. Although not so numerous as *S. platycercus,* they were quite common. On July 26 we tramped up past Emerald Lake and over Schofield Pass into Holy Cross National Forest. The Pass is at an altitude of 10,708 feet, and we observed countless Rufous Hummers all around there. They were more numerous there than at our camp in the valley below.

An amusing incident occurred on that trip which brought to mind Mrs. Bailey's statement (1935) that the Rufous Hummer is greatly attracted by anything bright red in color. We were sitting on a shale slide above Emerald Lake, resting and watching the play of light and

shadows on the lake below us. Suddenly, I was aware that a Rufous Hummer was suspended in the air, not over four feet away from me and directly at eye level. For what seemed like several minutes he hung there looking at me fixedly. It gave me a rather uncomfortable feeling to see that long beak aimed at, and so close to, my eyes. I thought of a bullet somehow miraculously arrested in its course in mid-air—a bullet with a lot of potential velocity still behind it. Finally it wheeled away, only to return shortly and again look me over. I tried stealthily to reach my camera in the knapsack on my back, but my motions drove him away and that time he did not return. I assumed he had been attracted by the bright red wool socks which showed above my boot-tops, but my companions insisted that it had been my sunburned nose (which had acquired so fiery a hue as to be the favorite butt of camp jokes) which the bird had mistaken for a clump of Gilia!

Both Warren (1916, 1928) and Babcock (1930) report this species as rare. I found it to be fairly common in the region last summer.

WESTERN FLYCATCHER, *Empidonax difficilis difficilis*.—Several were observed around Gothic, especially in the willows and low spruce trees near the streams.

I found at least two other species of flycatchers there; one, which was seen frequently, I thought was the Olive-sided Flycatcher, but I was unable to study it at sufficiently close range to be entirely sure of its identification. However, its behavior and general appearance tallied well with that species.

AMERICAN MAGPIE, *Pica pica hudsonia*.—Magpies were common in the country around Gunnison, and about as far north of there as Jack's Cabin, but I saw none around Crested Butte or Gothic. They seemed to be quite definitely restricted to Montane type of country.

ROCKY MOUNTAIN JAY, *Perisoreus canadensis capitalis*.—Although I saw none of these interesting birds in the immediate vicinity of our laboratory, they were fairly common in the dense spruce-fir forests above us.

CLARK'S NUTCRACKER, *Nucifraga columbiana*.—A flock of these was observed on July 8 passing over a spruce forest below Virginia Basin at an altitude of over 10,000 feet. This is my only record for this species.

ENGLISH SPARROW, *Passer domesticus domesticus*.—Accustomed as most easterners are to the hordes of ubiquitous English Sparrows in the cities, towns, and country throughout the east, I was impressed with their apparent scarcity in this part of Colorado. I saw but one or two of them in the town of Crested Butte and none at Gothic.

THICK-BILLED RED-WING, *Agelaius phoeniceus fortis.*—Although not generally common throughout this vicinity, there were a few places where they could always be seen in considerable numbers. One of these was in the meadows along the river, between Gothic and Emerald Lake, just below the entrance to the Biological Forest. This meadow lay at an altitude of between 9,500 and 10,000 feet.

WESTERN MEADOWLARK, *Sturnella neglecta.*—A common summer resident throughout this area. I was surprised to discover a very considerable altitudinal distribution of this species. Warren (1916) reports having seen it as far up as 9,500 feet. Babcock (1930) says they "occasionally wander up to 9,000 feet or higher." I first observed them at a much higher altitude on my first trip to Emerald Lake on July 5. On July 8, we 'hiked' up into Virginia Basin which lies at an altitude of 12,000 feet. The plaintive call of the meadowlark was one of the few sounds to break the awesome stillness of this spot. Hard-packed snow many feet in depth formed a glacial floor in the basin and, not over a few rods from its edge, meadowlarks were seen stalking about in the bordering meadow. I looked for nests but was unsuccessful in finding any. Meadowlarks were also frequently seen and heard around Gothic and Crested Butte. The interesting point here is that between Crested Butte and Virginia Basin is a rise in altitude of over 3,000 feet—a considerable range for one species to inhabit within one season. So far as I observed, only three other species shared a range so extensive—the White-crowned Sparrow, the Western Robin, and the Mountain Bluebird. I believe that the Desert Sparrow Hawk could also be added to this list, but I did not observe it myself at such great altitudes as have been reported by others.

BREWER'S BLACKBIRD, *Euphagus cyanocephalus.*—Common around Crested Butte and frequently observed in the meadow lands of the valley between there and Gothic. None seen above Gothic.

ROCKY MOUNTAIN PINE GROSBEAK, *Pinicola enucleator montana.*—A pair of these handsome birds were my constant neighbors throughout my stay at the Biological Station. Nearly every morning and evening I could find them in a certain clump of low spruces but a few rods farther south along the moraine on which my cabin stood. They were fairly tame and I could approach them within a few feet. They were undoubtedly summer residents there, although the species was not common.

CASSIN'S PURPLE FINCH, *Carpodacus cassini.*—I observed a few of these on different dates around a small corral in camp, but they did not seem to be very numerous.

Dr. John C. Johnson, Director of the Laboratory, reported that during the last week or two of June, prior to the opening of the laboratory, he had observed large flocks of Rosy Finches in camp. I judged from his description that these were either Purple Finches or Brown-capped Rosy Finches (*Leucosticte australis*). They had doubtless migrated to higher altitudes by the time I arrived, as I saw none of this latter species.

NORTHERN PINE SISKIN, *Spinus pinus pinus*.—In point of numbers, I believe these birds took first rank around Gothic. They were summer residents there and present in large numbers throughout July and until I left in August. They were nearly as obnoxious as the rodents in stealing the bait from my traps. I caught a few, however, and banded them.

WESTERN VESPER SPARROW, *Pooecetes gramineus confinis*.—A fairly common summer resident around Gothic.

WHITE-CROWNED SPARROW, *Zonotrichia leucophyrys leucophrys*.—Reference has already been made to the wide distribution of this species. I found several nesting pairs around the laboratory during July. Up in Virginia Basin I saw and heard numbers of them; they were obviously nesting there in the Krumholtz above timberline.

WESTERN CHIPPING SPARROW, *Spizella passerina arizonae*.—My first record of Chipping Sparrows is on July 21, when I saw them at the edge of an aspen grove in camp. Two or three of them were flitting around some scrub willows and weeds, feeding. I did not find many of them or see them often and do not know whether they were nesting or not.

GRAY-HEADED JUNCO, *Junco caniceps*.—Quite common around Gothic, but not so plentiful there as in the more heavily forested areas higher up. I found them nesting in Holy Cross National Forest.

MOUNTAIN SONG SPARROW, *Melospiza melodia fallax*.—I saw but few of this species and should say that it was not a common species there. My first observation was on July 12 and a few days later one was attracted to the porch of my cabin by some bread crumbs on the floor.

NORTHERN CLIFF SWALLOW, *Petrochelidon albifrons albifrons*.—Very common, not only at Gothic, but throughout that part of the country. I saw them in both Transition and Canadian life zones. In fact, this was one of the first species I learned to know in Colorado, for as the train on which I was travelling from Salida to Gunnison stopped at Marshall Pass, altitude 10,846 feet, I saw literally hundreds of the characteristic, jug-shaped nests plastered over the railroad water tower there, and swallows were darting all about.

On July 7 I observed a nest on one of our laboratory buildings that contained three young birds. It had been my intention to climb up some day and band these youngsters but, unfortunately, the nest was washed down by an extremely hard storm and when I found it next day the young birds were all dead.

BARN SWALLOW, *Hirundo erythrogaster.*—Barn Swallows seemed to be more typical of Montane than of Subalpine country. I saw them near Gunnison, but none in the Gothic region.

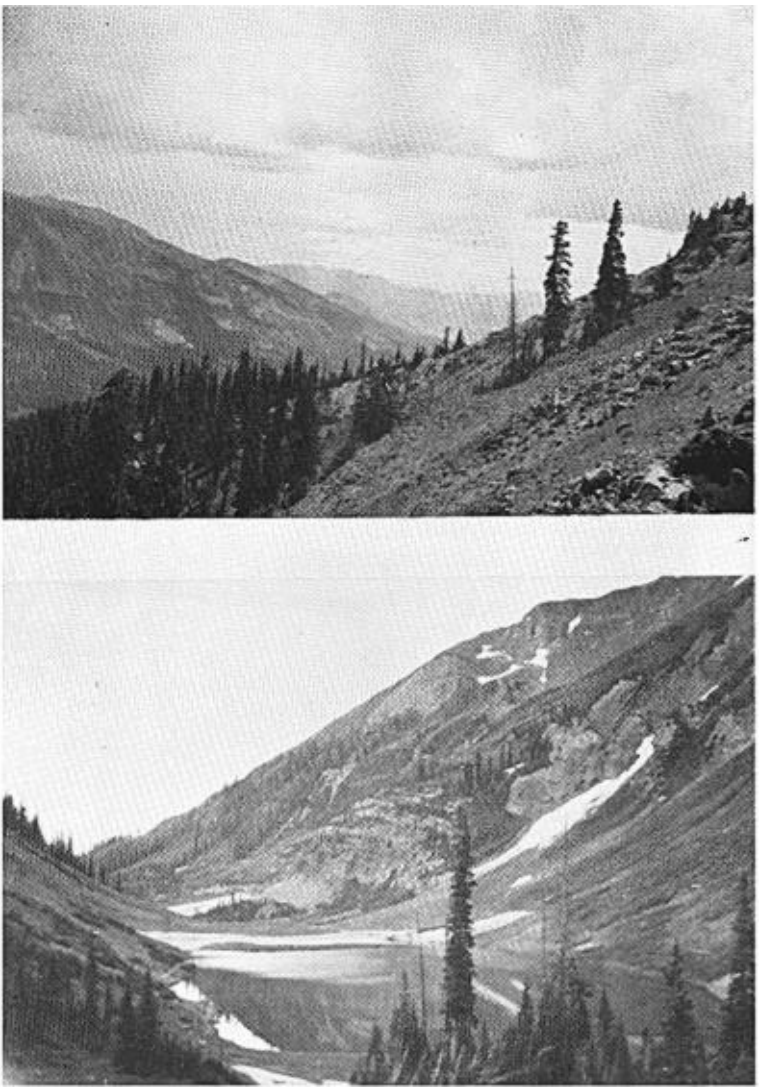
TREE SWALLOW, *Iridoprocne bicolor.*—Not at all common in this area, but I saw them occasionally in the valley southeast of Gothic.

VIOLET-GREEN SWALLOW, *Tachycineta thalassina lepida.*—As abundant around Gothic as the Cliff Swallows. Near Hot Springs, on Cement Creek, on July 22, I found an interesting association between Cliff and Violet-Green Swallows. There, under the overhanging edge of a large travertine formation and plastered to its walls and ceilings were hundreds of Cliff Swallow nests, occupied, so far as I could determine, by both species. The air was full of birds of both kinds, darting about together, and going in and out of these nests. The Violet-Green Swallows had apparently appropriated the old, unoccupied nests of the Cliff Swallows.

SHRIKE, *Lanius* (sp. ?).—On August 10, driving to Crested Butte, I saw a shrike on a fence beside the road. It was gone, however, before I could determine the species to which it belonged. However, I suspected that it was the White-rumped Shrike (*L. ludovicianus excubitorides*). This was the only shrike I saw in the region.

WESTERN WARBLING VIREO, *Vireo gilvus swainsoni.*—I saw a vireo for the first time that summer on July 21, busily hunting food in some aspen trees in camp. Thereafter I always found one or two around that same group of trees. I suspect they nested there.

ORANGE-CROWNED WARBLER, *Vermivora celata celata.*—On July 16 and 17, I caught, in one of the traps, two warblers which I tentatively identified as adult females of the genus *Vermivora,* but I could not determine the species. They were both released without being banded. On July 30, one of the students brought me a bird that had flown against a window and injured itself so that it was unable to fly. This bird was very similar to the two females which I had trapped and I was reasonably sure that it was of the same species—whatever that species was. This injured bird, however, was apparently an immature one, for there were evidences of considerable feather development. I killed it and, as best I could, prepared the skin for preservation and mailed it to Mr. Niedrach for final identification. He has identified it as an immature Orange-crowned Warbler. On August 5, I ob-



(Upper figure) LOOKING EAST FROM NEAR THE TOP OF BALDY MOUNTAIN.
(Lower figure) EMERALD LAKE, GUNNISON COUNTY, COLORADO.

served a male bird of this species feeding in the willow thicket below my cabin. I believe, therefore, that this species, although not common, was a summer resident and breeder there.

YELLOW WARBLER, *Dendroica aestiva.*—This and the Audubon's Warbler were our two most common warblers. Both species were found in considerable numbers, and both were nesting in and around our station.

AUDUBON'S WARBLER, *Dendroica auduboni auduboni.*—A very common summer resident.

MACGILLIVRAY'S WARBLER, *Oporornis tolmiei.*—On August 2, I saw a number of warblers flitting around in the spruce and low aspen trees around my cabin. It was a cloudy, rainy day, and visibility was rather poor, but I watched them for some time with my binocular. Although they seemed to be more or less together in one group, it was obvious that there were two quite distinct species there. I tentatively identified them as Macgillivray's and Pileolated Warblers. This identification was verified in the next few days. On August 4, I caught a female Macgillivray's Warbler in one of my traps and banded it. Thereafter I observed no more of this species around. Perhaps these were but a few stray migrants; I do not know.

NORTHERN PILEOLATED WARBLER, *Wilsonia pusilla pileolata.*—(See preceding paragraph.) On August 3, I caught a male Pileolated Warbler and banded it. Although this species first appeared in our vicinity apparently in company with the Macgillivray's Warblers, it stayed longer. I saw several of them around the same locale during the ensuing week, and they were still there when I left camp on August 11.

DIPPER, *Cinclus mexicanus unicolor.*—I frequently observed these very interesting birds along East River and its tributary, Copper Creek. One pair had a nest on the sheer, rocky wall of a natural mill-race on East River. When I first observed the nest on July 8 there were young in it. By the end of that month the nest was empty, although the adult birds were still in the vicinity.

WESTERN HOUSE WREN, *Troglodytes aëdon parkmani.*—A common summer resident in the Gothic area. Several nesting pairs were found in and around camp.

ROCKY MOUNTAIN CREEPER, *Certhia familiaris montana.*—First observed on July 23 when I saw a pair of them working on the trunks of the Spruce trees just outside my cabin. I saw them occasionally after that, but I should not call them common there.

MOUNTAIN CHICKADEE, *Penthestes gambeli gambeli.*—Quite common around Gothic and through the forest lands above, up to 10,500 feet.

WESTERN RUBY-CROWNED KINGLET, *Corthylio calendula.*—A fairly common summer resident and breeder around the Gothic area.

AUDUBON'S HERMIT THRUSH, *Hylocichla guttata auduboni.*—A common summer resident at Gothic and found all the way up to an altitude of a little over 10,000 feet. A breeding pair had a nest in a low spruce not far from my cabin. By the end of July the entire family, parents and young, was frequently to be seen quietly searching for food on the ground in that vicinity. I caught one of them in a trap and banded it.

WESTERN ROBIN, *Turdus migratorius propinquus.*—A common summer resident throughout this part of Colorado. I found them all the way from Montane country up to the glacial snows around Emerald Lake and Virginia Basin, and in considerable numbers (See paragraph on Western Meadowlark).

MOUNTAIN BLUEBIRD, *Sialia currucoides.*—As common a summer resident, and nearly as widely distributed, as the Robin. I have seen them at an altitude of a little over 12,000 feet, but Bailey reports that they go as far as 13,000. I noticed that like the Eastern Bluebird they seem to feel most at home close to human habitations. We had several pairs nesting in and around our laboratory buildings and they were fairly tame.

REFERENCES CITED

WARREN, EDWARD R.
1916. Notes on the Birds of the Elk Mountain Region, Gunnison County, Colorado. The Auk, 33 (3): 292–317.
1928. Additional Notes on the Birds of the Elk Mountain Region, Colorado. The Auk, 45 (1): 106–108.

BAILEY, FLORENCE MERRIAM
1935. Handbook of Birds of the Western United States, 1935 Edition. (Houghton Mifflin Company, New York.)

BABCOCK, DEAN, AND ASHTON, RUTH E.
1930. Birds and Plants of Rocky Mountain National Park.

Kalamazoo
Michigan

TERRITORY AS A RESULT OF DESPOTISM AND SOCIAL ORGANIZATION IN GEESE

BY DALE W. JENKINS

INTRODUCTION

TERRITORIES of birds have been carefully studied and variously defined from the standpoint of the function and result of territory. These studies have been concerned with breeding, nesting, pairing,