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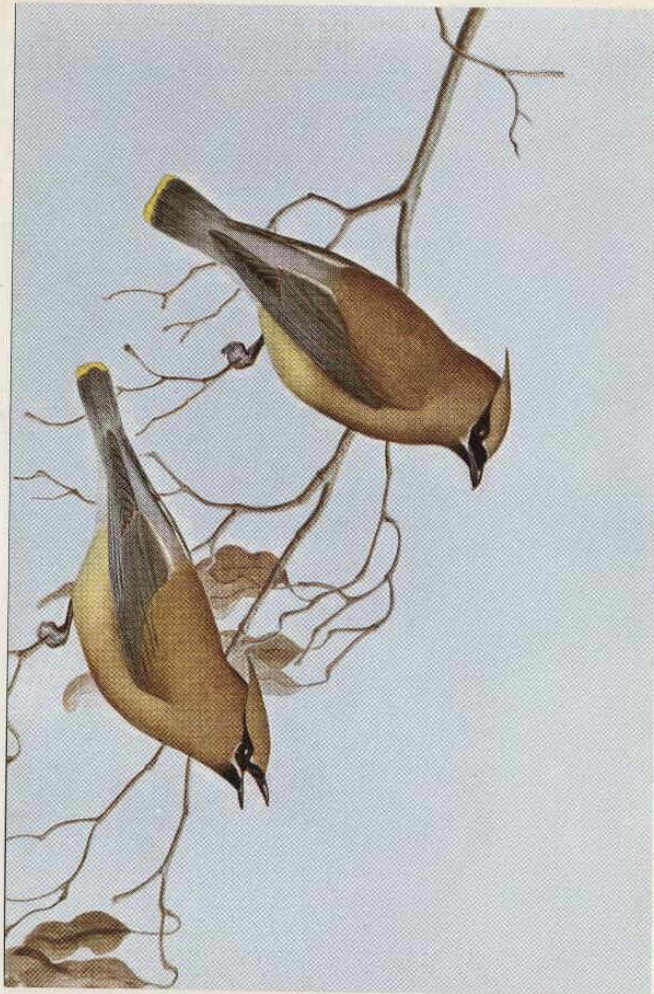
WINTERING YELLOW-THROATS IN THE ATLANTA REGION

By WILLIAM W. GRIFFIN

The Yellow-throat (*Geothlypis trichas*) is a common breeding summer resident and an abundant migrant in spring and fall in the Atlanta, Georgia, region. In winter, however, it is always rather scarce, sometimes entirely absent, the number of wintering individuals in the region varying from year to year. It would appear that Atlanta lies very near the northern extremity of the winter range of the species, for there are very few records of winter occurrences in climatically more northern localities (Greene *et al.*, 1945; Pearson *et al.*, 1942; Ganier, 1933). The convenient and probably apt term "half-hardy" has been used by Trautman (1940) to describe a status such as this where the normal wintering range of a species lies largely south of the region under consideration.

During the past three winters (1945-46 through 1947-48) the author has been especially interested in the Yellow-throat and has regularly visited several areas in the region where wintering Yellow-throats had previously been found to occur most frequently. These areas included four tracts along South River some five to seven miles south and southeast of the center of Atlanta comprising a total of 50 acres of suitable wintering habitat, three tracts along the south fork of Peachtree Creek lying five to eight miles northeast of the city comprising a total of 30 acres of suitable habitat, and one tract of about 40 acres of suitable habitat lying along the Chattahoochee River 17 miles north of the city. All of the areas fall within the limits of the Atlanta region as defined and generally described by Greene (1933). Visits regularly made during the winter months were largely confined to the week ends, though in each year daily observations were made during the last two weeks in December. The data and conclusions contained herein are derived almost exclusively from observation in these eight limited areas totaling roughly 120 acres.

Factors influencing population fluctuation from year to year.—As has been previously stated, the number of individuals wintering in the region varies considerably from year to year. Trautman (1940) has suggested that the size of "half-hardy" populations in winter is largely determined by climatic conditions in the preceding fall. His theoretical explanation is that late migrants tend to tarry during mild weather, and migration is not continued unless adverse weather forces them further south. The longer a bird tarries the more the migratory urge diminishes, so that increasingly adverse conditions are necessary to cause it to continue its migration. Theoretically then, the first half of November would constitute the critical period for the Yellow-throat in Atlanta, since the last migrants are generally seen during



CEDAR WAXWINGS (*Bombycilla cedrorum*)
From a water color by Richard A. Parks

the early part of this month. Although data sufficient to fully substantiate such conjecture would require observation over a great many years, there is a correlation between average mean temperature during this period in each of the three years and the number of individual Yellow-throats known to remain in the areas regularly visited in the subsequent winters. This correlation is shown in Table 1. Following the warm, dry November of 1946 at least seven birds were known to remain the entire winter. Yet after the comparatively cold, wet November of 1947 only one bird was suspected of wintering, and this one, a male collected on January 25, 1948 in an area where none had been seen previously that year, may well have been a transient. Thus, Christmas bird counters might predict the number of Yellow-throats they would find by studying November weather records.

TABLE 1.
Effect of weather in early November upon winter population
of Yellow-throats in Atlanta.

Winter	Mean Temp. Nov. 1-15 *	Low Temp. Nov. 1-15 *	Rainfall Nov. 1-15 ‡	No. individuals sus- pected of wintering §
1945-46.....	59	32	0.83	5
1946-47.....	61½	37	0.49	7
1947-48.....	51	35	7.40	1

*In degrees F. at City Office, Weather Bureau, Atlanta.

‡In inches at Airport Office, Weather Bureau, Atlanta.

§In eight study areas totaling approximately 120 acres of suitable winter habitat.

Another factor which might possibly influence population size from year to year is the presence or absence of suitable habitat. This factor is probably of negligible effect on the Yellow-throat in this region, however, since good habitat for the species is available in the region every year in about the same quantity. For a "half-hardy" such as the Grasshopper Sparrow (*Ammodramus saviannarum*) this factor takes on more significance, for the specialized habitat requirements of this species are not filled every winter.

Crippled Yellow-throats may occasionally remain in the region during the winter, though I have never seen one at this season which gave any indication of being forced to remain by reason of incapacity to migrate. Generally a small bird, so crippled as to be unable to migrate, would not survive long. Larger birds may be able to survive, and undoubtedly a Blue-winged Teal (*Anas discors*) which remained on the lake in Piedmont Park in Atlanta during the entire winter of 1947-48 was forced to do so by virtue of the fact that it was flightless.

Other circumstances which might conceivably cause year to year differences are an actual physiological change in certain individuals allowing them greater tolerance of cold, or population pressure on the normal wintering or breeding range. There is no evidence either for or against such factors in the case of Yellow-throat

fluctuation, but it is not unreasonable to suppose that one or both is a factor in the noticeable increase in the number of wintering Blue-headed Vireos (*Vireo solitarius*) in the last three years in the region, since this species is now invading the Piedmont as a breeding bird (Odum and Burleigh, 1946; Fleetwood, 1947).

Winter home range.—A pronounced tendency exists in the Yellow-throat to spend the winter within a rather limited area of suitable habitat. In this respect it may be said to establish and maintain winter territory, although, since such an area is not defended as is breeding territory, it is more properly called a winter home range or feeding area. In this region the winter habitat requirements seem much more specialized than at other seasons. Invariably, winter birds are found in areas that are marshy or wet, with heavy underbrush available such as briar patches, thick grass or sedge, or viny tangles and thickets. Since areas filling these requirements are never extensive in this region, the winter home range of an individual is never extensive. Often two or more birds will winter in the same small marshy area, and, although they never associate closely, they never fight, but seem to share every part of the bog without antagonism.

Once a home range is established in November, the individual is loathe to leave as long as the food supply is sufficient. Weather conditions, unless extreme or prolonged, have comparatively little effect upon the birds. Some shifting does occur, however, during extremely cold snaps, for certain individuals cannot thereafter be found in their old ranges, or perhaps a single bird is seen in an area where none had been present before. Particularly favorable areas may at such times have their numbers augmented by an additional bird.

During February the sedentary instinct apparently gives way to the migratory urge, for individuals begin to shift and wander more and more as the month passes. Generally the over all population in the region remains fairly constant, however, until the advent of a continuous warm period late in February or early March at which time it does increase perceptibly. Obviously the wanderings at this time assume direction and distance indicating a break up of winter home range completely. A week or so later males can be heard singing along every creek bottom.

Sex ratios in winter.—Apparently all Yellow-throats wintering in the region are exclusively males, for I have never seen a female in the region in midwinter. My latest fall date for the female is November 3, 1946 when one was collected, while my earliest spring arrival is March 28, 1948, long after the first migrant males had appeared. That males are the hardier in other species as well was evidenced by the fact that out of thirteen Atlanta specimens of other "half-hardy" species all but three were males. These specimens represented the Blue-headed Vireo and Grasshopper sparrow, and also the House Wren (*Troglodytes aedon*), Orange-crowned Warbler (*Vermivora celata*), and Palm Warbler (*Dendroica palmarum*).

Subspecies.—As a general rule the more northern breeding races of a species are said to winter in the southern part of the winter range of that species (Lincoln, 1935), although definite information on eastern races is lacking. Certainly more southern races are usually less migratory. Thus, the race of the Yellow-throat to be expected to occur in Atlanta in winter would be the local breeding race, *typhicola*

(Burleigh, 1937). Two out of four specimens collected in the area in winter were *typhicola* (February 22, 1947—Griffin; January 25, 1948—Griffin), but the other two represented the most northern race, *brachidactyla* (January 18, 1942—Griffin; January 2, 1947—Johnston). The rather interesting point suggested is that at least two races do occupy the same region in winter even though it lies at the northern extremity of the wintering range of the species as a whole and these two races occupy different geographical areas in summer.

Acknowledgements.—I am grateful to Dr. Eugene P. Odum and Dr. J. Fred Denton for critically examining this paper and offering many suggestions. Acknowledgement is also due David W. Johnston for the privilege of referring to a specimen collected by him.

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NESTING OF THE MOUNTAIN VIREO AT ATHENS, GEORGIA,
CONCLUSIVE EVIDENCE OF A SOUTHWARD INVASION

BY EUGENE P. ODUM

In 1945 Burleigh and I suggested that the Mountain Blue-headed Vireo, usually called the Mountain Solitary Vireo (*Vireo solitarius alticola*), might be about ready to extend its breeding range from the Mountains to the Piedmont of Georgia (see *Auk*, 63: 389-401, 1946). This suggestion was based on the fact that the species was very abundant in the Mountains (creating potential population pressure), had been observed at very low elevations at the foot of the Blue Ridge (in Habersham and Pickens counties), and was already known to nest on the Piedmont of North Carolina (indicating that it could tolerate Piedmont conditions). In our paper we also stated that "very rapid changes probably are not to be expected." In other words, we assumed that if the bird did extend its range it would do so gradually, a few miles a year.

There can be no doubt that a southward invasion, or at least an attempted invasion, is now occurring as predicted, but the manner of invasion is not as suggested. Instead of a gradual extension, the bird has suddenly appeared at points some distance from its former range and has colonized locally, somewhat reminiscent of the Robin invasion 20 years ago. On June 16, 1946, Raymond J. Fleetwood found a nest of this species on the Piedmont Wildlife Refuge near Macon, at least 120 miles from the previously known limit of the breeding range (see *Auk*, 64:462-3). In addition to this nesting pair Fleetwood found the Mountain Vireo at eleven other widely separated places on the refuge and adjoining areas in Jones and Jasper Counties that summer. During the summer of 1947, Burleigh found singing males in Upson County, also a long way from the Mountains. "The habitat here, as in Jones County, was tall pine timber with an understory of persimmon, dogwood, red maple, etc." (Burleigh, personal communication). In these cases, of course, one could not be absolutely certain that the bird was new to the areas (as a breeder) and not merely overlooked in the past. This year, 1948, any doubt about a real range extension by this species has been dispelled by its dramatic appearance and nesting at Athens under circumstances which indicate *positively that the bird is new to the area*, and furthermore, that probably we have been fortunate in finding the bird the very first year that it has nested in the region.

Ornithologically, Athens (Clarke County) is one of the best known localities in the State. For more than 15 years Burleigh lived here and worked intensively spending countless hours in the field at all seasons. After a period of several years absence from the State, he was again active in the Athens vicinity 1945-47. In recent years our group at the University of Georgia has also kept a weather eye out for birds. In all of this observation there was not the slightest evidence that *Vireo solitarius* remained in summer or nested in the region, that is, until this year. Just southwest of the city limits of Athens I own a tract of 28 acres bordering the Middle Oconee River. The predominant vegetation of the tract is a loblolly-short-leaf pine forest ranging from young to fairly mature stand. For three seasons, 1946-48, I have conducted a breeding bird census on the area which was, therefore, visited frequently. During the summer of 1947 we built a house on the property. I am quite certain

that the Mountain Vireo did not occur on the area or anywhere in the vicinity in 1946 or 1947. During March and April of 1948 a Mountain Vireo was noted singing on the hillside below my house, but since migrants of this species are known to occur here as late as early May I did not follow the bird too closely or observe a mate. The next thing I knew, on May 16, the bird was feeding bob-tailed young not long out of the nest; it had paired and built a nest (which I never did find) almost under my nose. Fortunately, the species is double-brooded so I was fully alerted the next time and had no trouble locating the second nest built by the pair, which, when found on May 31, contained 2 eggs. The set of 3 eggs was complete the next day and incubation begun by both sexes as is characteristic of the species. Another vireo characteristic is that the male often sings near or even on the nest; the female does not sing as far as my observations have determined. The male of my pair was not observed singing while incubating but he usually sang when approaching and leaving the nest, thus aiding the observer in locating the nest, provided, of course, one is on the lookout. The nest was located near the top of a small short-leaf pine 14 feet above the ground and scarcely 100 yards from my house. The territory covered by the birds comprised about 3 acres of mature, but fairly open, pine forest. The nest was in an ideal site for study and photography. A post was set up next to the nest and my camera placed on top, level with the nest. The birds were so tame (as is characteristic of this species) that it was only necessary to attach about 20 feet of string to the shutter, back off a few feet and pull when the bird returned to the nest. The photograph reproduced here was one of the results.

Unfortunately, two days after taking the pictures, the eggs disappeared, culprit unknown, so that opportunity for further life history observations was ended. However, the birds did not give up and after about a two-week interval built another nest 25 yards further down the slope, this time 30 feet above the ground out near the end of a long limb of a larger short-leaf pine; not a very favorable location for observation. At present date of writing (July 14) the birds are incubating what must be the third set of eggs laid (but, of course, the second brood, if all goes well).

In the meantime, Dave Johnston and I began to search the Athens vicinity to see if we could find additional birds. One singing male was observed about half a mile from my bird in similar pine woods. No birds were found in the pine forests in the vicinity of the University or out along Sandy Creek, Burleigh's old stamping grounds. However, our search was begun late in the season and has been by no means extensive. Next year we plan to start earlier and really comb the region. We can only say that the early occupation of this region by the Solitary Vireo appears to be local, one definite nesting pair and one additional male or pair in the same general area.

The habitat choice of the Mountain Vireo on the Piedmont is interesting and was discussed briefly in the papers previously mentioned. Pine woods, usually fairly mature but open and with well developed deciduous understorey seems to be chosen, and is the type of habitat in which to look for the bird in the Georgia Piedmont. Two theories come to mind to explain why the Mountain Vireo chooses pines while it is largely an inhabitant of the broad-leaved forests in the Georgia Mountains. Competition with closely related species has been suggested as a factor in habitat selection of birds, as has been advocated especially by David Lack and other English bird ecologists (see *Ibis*, July, 1944). In case of the Mountain Vireo, it is unlikely



Mountain Vireo nesting at Athens, Georgia, June 5, 1948. This is the male which aids in incubation. The nest contained three eggs at time of photographing.

that competition would become operative so early in the invasion and the species most like it in habits and notes and most likely to become a competitor is the Yellow-throated Vireo (*Vireo flavifrons*) which itself often chooses pine forests as breeding territory. A second and much more likely explanation is that the choice of pines represents an ancestral habitat preference deeply ingrained in the hereditary makeup of the species. In the center of its range to the far north, *Vireo solitarius* is largely, if not entirely, a bird of the coniferous or needle-leaved forests. For example, Forbush, speaking of New England, says: "This is a bird of the white pine woods. It rarely breeds except in its favorite pines or near them, although its nest is often hung in a birch or even an apple tree near the woods" (See Forbush and May, *Natural History of Birds of Eastern and Central North America*, p. 404). In ages gone by, perhaps in glacial times, the species invaded or was forced into the southern Appalachians where, as with many other coniferous forest species (Blackburnian Warbler, for example) it has spread out and largely occupied deciduous forests. At the southern end of the Appalachians conifers are scarce and if a species is to become a success in that region it would have to adapt itself, partly at least, to deciduous forests even if it were a No. 2 choice, so to speak. At Highlands, N. C., where I have studied populations of various habitats rather in detail, the Solitary Vireo is one of the 4 or 5 most abundant breeding birds of hemlock, white pine and mixed forests. It is less

abundant on a per acre basis in purely deciduous woods even though such woods occupy much greater areas and in the aggregate contain the great bulk of the vireo population. On reaching the Piedmont, according to the ancestral choice theory, the species reverts to its first choice, needle-leaved trees. My pair at Athens spent most of their time feeding and resting in pines even though not adverse to foraging occasionally in deciduous trees and shrubs which are scattered in the stand. It was evident that the birds instinctively preferred the pines. It should be emphasized that the location of the nest, whether in a pine or in a deciduous understory tree (persimmon, sweet gum, etc.) as in Mr. Fleetwood's record, is incidental and ecologically less important than the character of general habitat where the bird lives and feeds. To explain further what is meant, let us take the Carolina Wren (*Thryothorus ludovicianus*) as another example. The wren often builds its nest in a building, but one would hardly speak of the Carolina Wren as an inhabitant of houses. Woods adjacent to the building are an absolute prerequisite for a nest in the building. In describing the nesting of birds one should not only describe the location of the nest but also the habitat where the bird is maintaining its territory or feeding grounds. Thus, our Mountain Vireos in the Piedmont may place their nests in a pine or in any other tree that is convenient, but the habitat of breeding territory has been invariably pine forest so far.

An interesting and perhaps significant sidelight on the invasion is that it apparently has been preceded by an increase in the number of Mountain Vireos which wintered on the Piedmont, at least the number of birds observed wintering has been greater during the last three years at Athens and Atlanta (William W. Griffin, personal correspondence). Perhaps the reason that the bird nested in Jones County is that this County contains very large tracts of favorable pine forests where there may have been a large overwintering population. However, increase in wintering population may be coincidental or simply an expression of general high population level of the species and have nothing directly to do with the invasion. Certainly we need to have many more critical observations on how this and other species come to occupy new territory.

We would like to urge all bird students in the Piedmont to search the pine woods in their regions this coming winter and spring and to investigate all "Yellow-throated Vireo-like" songs (unless one has a good "ear" for songs the songs of the Yellow-throated and Blue-headed Vireos are easily confused), or, in fact, scrutinize all vireos carefully. We have a golden opportunity to really plot, by cooperative observation, the course of the invasion in the next few years (assuming that it will not be abortive) and thus study evolution in the making.

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THE YELLOW-BILLED CUCKOO IN SOUTHEASTERN GEORGIA

BY FREDERICK V. HEBARD

The "Rain-bird" or Yellow-billed Cuckoo (*Coccyzus a. americanus*) is a common resident of the river swamps and branches of far southeastern Georgia. In the Okefinokee they are common and are "observed or heard usually on the borders of the prairie, in the depths of the cypress bays, or on the river bottoms of the Suwannee, but were also found occasionally in the high pines on the islands." (1) They arrive in mid-April, our earliest Coleraine record (outside of one on March 1, 1943 by Burch) being April 11, 1944, and leave in mid-October, our latest date being October 17, 1947.

Nesting commences shortly after arrival, a nest being found May 7, 1945 which had 2 eggs on May 9, and continues at least until July 30. Sufficient data is not at hand to determine whether the species is two-brooded. If incubation lasts 14 days and the nest life another 14, then a bird laying by May 9 could clearly lay another set which would hatch by mid-July. I usually see more cuckoos than I hear after the middle of June, which would indicate late nests are the exception and probably due to the destruction of the first clutch of eggs. The south Georgia nests are usually well constructed for a cuckoo's nest, the Okefinokee nest with 2 eggs on June 17, 1912 being the best example of a cuckoo's nest Wright & Harper (1) had ever seen, and two of the nests I have examined were as well or better constructed than those of the Mockingbird or Brown Thrasher, although much more shallow and small for the size of the bird. All nests were within 100 feet of the St. Mary's River. Our nest records follow:

1. "A very sorry nest" 8 feet up in a myrtle bush made of a little moss and a few dead twigs. This nest was found May 7, 1945. Two eggs could be seen through the bottom May 9 and these were gone May 10.
2. A nest about 2½ feet up in a vine trailing from a persimmon tree containing 4 eggs June 10 which were gone June 21. The nest removed July 1 was made of twigs lined with moss, was roughly circular in shape, about 2 inches deep over all, 4 inches in outside diameter and 2½ inches in inside diameter.
3. A nest about 7 feet up and 4 feet out on a limb of a blackgum tree made of twigs and lined with spanish moss and lichens, found July 18, 1943 with one young hatched and fairly well quilled and the other just emerging from the egg.

The first two nests were in the southwestern corner of Camden County. The third nest was several miles up the St. Mary's in Charlton County from the county line. The male flew from the vicinity of the nest as we approached in a boat. He made so much more noise than is usual with the species, we landed and looked for the nest. We walked along the river bank and would have missed the nest had the female not flopped out of it to the ground and feigned injury. Burch had noted injury feigning also at another nest, as has Grimes in Florida (2), probably near Jacksonville 40 miles south of the St. Mary's. And Wilson (3) recorded the female sitting "so close, that you may almost reach her with your hand, and then precipitates herself to the ground, feigning lameness, to draw you away from the spot, flut-

tering, trailing her wings and tumbling over in the manner of the Partridge, Woodcock and many other species."

I had Burch watch the nest. He reported the birds in the nest July 30 and gone August 1. He observed they had not looked big enough on July 30 to have left the nest by August 1. He did not realize how the sheaths burst so the young become feathered in the 24 hours before leaving the nest, as observed by Dugmore (4) and Walkinshaw (5). Our observations give a nest life of at least 12 and not over 14 days for the last bird to hatch, as against 7 to 9 days for the Black-billed Cuckoo (*Coccyzus erythrophthalmus*) (5).

Cuckoos are so quiet from the end of June on I believe they only raise one brood and that this July brood was the result of the destruction of earlier eggs. The lack of disturbance at nests 1 and 2 indicated a snake as the culprit to Burch.

Grimes' (7) earliest date was April 3, his last November 11, 1929. His nest records begin April 20, 1923 and end August 5, 1932. He has no nest with over 3 eggs and believes "that two or more broods are regularly reared in a single season." I do not so believe. Our observations do coincide on one point: that the eggs are sometimes laid at great intervals. For my earlier bird in nest 3 to have been fairly well quilled it must have been several days old.

The earliest Charleston, S. C. records seems to be April 10, 1908 and the latest November 7, while the earliest nest was May 2, 1909 with sets laid in August (8). The earliest South Carolina record is April 6 (9). Wayne saw "young birds nearly ready to leave the nest, as well as young just hatched and three eggs in different stages of incubation, all in the nest at the same time." (7) This does not necessarily mean two broods are raised a year by the same parents.

At Savannah, Ga., the earliest date recorded is March 24 and the latest October 19 (10) and at Raleigh, N. C. the Brimleys in 45 years had an earliest date of April 22 and in 26 years a latest date of October 17 (11).

SUMMARY

1. The Yellow-billed Cuckoo arrives upon its nesting grounds in southeastern United States usually in mid-April. The earliest recorded date is March 19 at Savannah, Ga. The March 1 Coleraine record may represent a wanderer from the small population wintering in South Florida.

2. Nesting commences almost immediately and continues always until well into June and sometimes well into July or August.

3. No proof has yet been presented a pair raises two broods in a year. Destruction of early clutches may be the reason for the late nestings.

4. Nests in southeastern Georgia are sometimes unusually well constructed for cuckoo nests. They invariably are made of twigs and lined with spanish moss and sometimes are lined also with lichens.

5. Nests in southeastern Georgia are always over or near water and the cuckoo is seldom found except near water.

6. Both parents attract attention to themselves from the nest, probably regularly.

7. The nestling life continues for at least 12 days.

8. Departure for the winter takes place usually in October with lingerers in South Carolina until November 7 and in Duval County, Florida until November 11.

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MORE NOTES ON THE TWO RACES OF SPARROW HAWK INHABITING GEORGIA

BY IVAN R. TOMKINS

In an earlier paper (*Oriole* 7: 13-14) a report was made of the occurrence of the Little Sparrow Hawk (*Falco s. paulus*) in Georgia south of a line across the middle of the State running roughly southwest to northeast; of the lack of breeding specimens from the State; of a breeding specimen of the Eastern Sparrow Hawk (*Falco s. sparverius*) from Athens; and of the occurrence of this latter race in the non-breeding season over much of the State.

I had hoped this report would bring out some additional and interesting records, but the result was negative. Also, I had hoped to personally explore into some of the habits of *paulus*. Now, six years later, it seems best to set down some tentative things before they get too stale or too deeply lost in notes no one may ever read.

The status of *sparverius* seems pretty well established as a fall, winter and spring resident. For the past three years my work has called for regular trips every month or so from Savannah across the Coastal Plain to Augusta. The numbers of sparrow hawks seen on these trips at all times of the year indicate that the species is absent in summer, sparse in winter, and plentiful in spring (March and April) and in fall (September through November). When the conspicuous nature of the species is considered along with other known facts about distribution, it is a good assumption that practically all of these were *sparverius*. It is not practical, however, to do much bird observation, make notes, etc., while giving the necessary attention to driving.

A similar type of observation has been made on half a dozen trips by automobile northward through the middle of South Carolina, North Carolina and Virginia in the months of July, August and early September. No sparrow hawks were seen until I was well up into the middle of Virginia. In early October on a trip southward quite a number were seen all the way. This adds strength to the assumption that there is a decided gap between the breeding ranges of the two races in these seaboard states.

An interesting theory has developed concerning the desired habitat of *paulus*. In June 1938, Mr. S. A. Grimes and I spent most of one Sunday with a family of these birds in Marion County, Florida. All day long the parents carried in lizards to the young, and no other kind of food. The nest was about twenty feet from the ground in a hole in a tree which stood on a sand ridge with sparse vegetation on the ground. Lizards were abundant.

On April 20, 1941, Don Eyles and I saw several sparrow hawks in similar localities a few miles from Ludowici, Georgia. In one case a male brought a lizard and gave it to a female. She sat high on a dead limb and held the lizard in her bill until we left.

From these facts is deduced the following:

- a. *Paulus* is a lizard eater.
- b. Chosen breeding places will include (1) open sand-hill country with plenty of lizards, (2) trees or equivalent with suitable nesting holes.

Much of the Coastal Plain of Georgia is unsuitable habitat by this yard stick.

It would be very interesting to try and locate the places where *paulus* has been taken, and see if these requirements are met. If a breeding place could be located and pellets collected, this lizard-eating habit, which is highly theoretical at present, might be determined. It is possible that the Fish and Wildlife Service now has food determination information bearing on this problem, though it would be quite necessary to be certain of the subspecific determination of the birds for the subspecific characters of the present day are not those given in the literature of earlier days.

1231 East 50th St.
Savannah, Ga.

GENERAL NOTES

FIRST RECORD OF SWAINSON'S WARBLER IN THE GEORGIA MOUNTAINS IN SUMMER.—

On the morning of June 3, 1948, I collected a singing male Swainson's Warbler (*Limnethlypis swainsonii*) near Robertstown, White County, Georgia, at an elevation of 1700 feet. The bird was inhabiting the ravine through which the Tray Mountain Road passes just a short distance from Highway 75. The dominant trees of this ravine are hemlock and white pine interspersed with chestnut and other oaks. Up the slopes a short way from the creek that flows through the ravine scattered Virginia pines are present. The understory which is fairly thick consists of rhododendron, mountain laurel, dogwood, arbutus, galax and spirea with a scattering of hardwood saplings.

At the time (8:00 a. m.) of my visit to the area the bird was working through the understory on the side of the ravine above the road and some 50 yards from the

creek. After listening to the bird sing for several minutes I crawled in under a thick clump of rhododendron and squeaked. Almost immediately it appeared in the tangle low down to the ground within six feet of me and was collected.

Credit for discovering this bird must go to Mrs. Charles Neal. Mrs. Neal in passing along the road had heard the bird's loud ringing song in that area for several weeks prior to its collection. Although she never saw the singer of the song and had never heard the Swainson's Warbler's song, she suspected the bird of being this species. It was because of her suspicion that I was there to investigate.

Whether or not this bird was breeding cannot be determined for certain. No mate or nest was seen and by the time the bird was skinned the next day the gonads had deteriorated considerably so that it was impossible to tell from them whether it was in breeding condition. Nevertheless, the fact that the bird(s) had been present for several weeks and that Mrs. Neal heard birds singing in the same area last summer (1947) strongly suggests that this warbler does breed there.

The discovery in recent years that Swainson's Warbler breeds over a wide area in the Southern Appalachians has made me, as well as others, suspect that it breeds sparingly in the Georgia mountains. Now that it has been demonstrated that this warbler does occur in our mountains in summer others should be encouraged to search for it. From my experience in the mountains the habitat in which it will most likely be found lies along our better trout streams in the Chattahoochee National Forest. Since the Georgia mountains are lower and smaller than those in the areas in western North Carolina and eastern Tennessee where the bird has been found in summer, apparently suitable ravines occur at lower altitudes and are fewer than in the mountains further north.—J. FRED DENTON, 1510 Pendleton Road, Augusta, Ga.

HENSLOW'S SPARROW NEAR ATLANTA.—On February 28, 1948, I collected a Henslow's Sparrow (*Passerherbulus henslowii*) from an open dry field located about six miles north of the center of Atlanta in Fulton County, Georgia. This individual, a moderately fat male, had probably been resident in this field for some time, since a similar sparrow, unidentified at the time, was observed there on February 8, 1948.

This is the first specimen of this species from the Atlanta region and serves to positively establish the place of this species on the Atlanta list, a place which it has rather dubiously occupied on the basis of several sight identifications and vague statements of its occurrence.

This specimen as well as another, a male collected in Camden County, Georgia on January 19, 1909, by Isaac F. Arnow and now deposited in the Emory University Collection, was sent to Dr. Herbert Friedmann of the United States National Museum for subspecific identification. In commenting upon these two specimens Dr. Friedmann said, "I am very doubtful as to the validity of any races of this species, but, in so far as there may be two subspecies, I would say that your birds are of the eastern form *susurrans*. I have compared them with a series of this form and of typical *henslowii* and find that they probably belong with the former, but, as I have intimated above, I am not at all sure that the two are distinct."—WILLIAM W. GRIFFIN, 135 Peachtree Way, NE, Atlanta, Georgia.

ANOTHER SAW-WHET OWL IN ATLANTA, GEORGIA.—On March 14, 1948, I found the badly battered remains of a Saw-whet Owl (*Aegolius acadica*) on Peachtree Road about seven miles north of the center of Atlanta. The bird had apparently been struck by a car during the night. Unfortunately it was impossible to preserve the bird's skin. The only other recorded occurrence of this species for Atlanta was a male bird collected in 1940 by William W. Griffin (*Oriole*, 5:8, 1940).—RICHARD A. PARKS, 3754 Peachtree Road, Atlanta, Ga.

A PURPLE GALLINULE IN THE ATLANTA REGION.—On May 5, 1948 a Purple Gallinule (*Porphyryla martinica*) was captured alive by a small boy on Oxford Road near Emory University in DeKalb County, Georgia. The bird was taken to Fernbank Children's Museum where Mr. Kenneth Lewis identified it as this species. For some time the bird was kept at the Museum and apparently regained much of its vigor. On May 29, however, it became noticeably weakened and died the next day. Mr. Lewis kindly gave the specimen to me for preservation. Upon skinning it was found to be a female with slightly developed ovary. It now remains in my collection at Emory University.

This is the first record of the occurrence of this exotic species in the Atlanta region.—WILLIAM W. GRIFFIN, 135 Peachtree Way, NE, Atlanta, Georgia.

SWAINSON'S WARBLER IN ATLANTA.—On April 18, 1948, I collected a male Swainson's Warbler (*Limnethlypis swainsonii*) from a damp tangle in Collier Woods in Atlanta, Fulton County, Georgia. It was in this same tract of woods that the late W. H. LaPrade found this species nesting in 1920 and 1922.—WILLIAM W. GRIFFIN, 135 Peachtree Way, NE, Atlanta, Georgia.

CANVAS-BACK DUCK IN ATLANTA.—A male Canvas-back (*Aythya valisineria*) was seen by me on Piedmont Park Lake on January 25, 1948. The weather was cold and clear following a day of so of sleet and ice. This duck remained on the lake for several days and when last seen had with it a female or immature of the same species. I did not record the final date but think it was a week or more after the above time. The birds were clearly seen several times with 6X glasses at a distance of a few hundred feet. They were seen in a short flight over the water when last I visited the lake.—RAY C. WERNER, 758 Wildwood Road, NE, Atlanta, Ga.

A GEORGIA RECORD FOR THE MEXICAN GROUND DOVE.—I have recently been advised by Allen J. Duvall of the Fish and Wildlife Service that among the specimens of the Mexican Ground Dove (*Columbigallina passerina pallescens*) in the Fish and Wildlife Service collections in the U. S. National Museum is a male of this western race taken by Robert C. McClanahan on March 26, 1938, at Rockledge, Laurens County, Georgia. It bears his original field number 518, and the Museum number 365388. This is apparently the first record for the occurrence of *pallescens* in Georgia, but in view of the fact that this western race occurs as a regular and not uncommon transient on the Gulf Coast of Mississippi and Louisiana it is not surprising that it should eventually be recorded in Georgia. I am indebted to Mr. Duvall for the privilege of recording for the first time the occurrence of this well marked subspecies in the state.—THOMAS D. BURLEIGH, Fish and Wildlife Service, Moscow, Idaho.

SUMMER RECORDS OF THE GOLDFINCH IN SOUTH GEORGIA.—Among the more interesting observations made in southwest Georgia during the summer of 1947 were those of Goldfinches (*Spinus tristis*) in the following localities: July 30, 5 mi. s.e. of Richland, Webster Co. (one bird noted briefly in flight); August 5, 1 mi. w. of Edison, Calhoun Co. (one bird seen and heard as it bounded by overhead). Between these dates, however, another location for this species was established in Clay Co., a mile south of Ft. Gaines, where flight notes were heard August 2 and where, on the 5th, a restless male was seen three times. His flights were high and long-sustained, and at no time was he approached within close range. My return to the same location on August 19 yielded sight, within a half hour, of a goldfinch which apparently was the same male. The place frequented by this bird was the same as that where he was found on the 2nd and 5th. It was a long slope grown in pine, mainly shortleaf, with some loblolly and an occasional longleaf pine, with a ravine below and stretches of pine and open land above. Undergrowth included a considerable amount of scrubby sweetgum, persimmon, hawthorn, and winged sumac. The male bird, first seen at noon, continued his restless ways. After each aerial trip he would alight at or near the tops of various of the lower, broad-leaved trees, or near the crowns of the higher ones, one a sweetgum and the remainder pines. The hillside proved to be his regular "beat." About 1 p. m. he was collected from the dead upper branches of a little sweetgum. A female goldfinch, apparently his mate, visited a nearby tree of the same kind, called several times, and then suddenly vanished. Search for a nest on this part of the slope was without success.

The specimen was in breeding condition, the testes measuring 6.5 mm. long. Plumage was bright, and some wear was observed in the flight feathers, tail coverts, and rectrices. The lesser wing coverts were gray with a rather yellowish suffusion, and not wholly yellow. Of especial interest was the fact that the wing measured 67.0 mm. in length, 3.6 mm. less than the minimal measurement given by Ridgway (*Birds of North and Middle America*, Part I, 1901; pp. 109-110); this was actually small, and not due merely to wear, which was slight. The tail was 42.5 mm. in length, or 0.9 mm. less than the minimal given by Ridgway. The culmen, 10.0 mm., was within the normal range. We have, then, not only an "extension" of apparent breeding range for the species, with regard to both Georgia and the southeast, but also the possibility of a population of smaller-sized birds which might in time prove to be racially separable from the nominate form.—ROBERT A. NORRIS, Department of Zoology, University of Georgia, Athens, Georgia.

PINE SISKINS IN SOUTH GEORGIA NEAR WAYCROSS.—A flock of about 20 Pine Siskins (*Spinus pinus*) was observed feeding in open turpentine pinelands on January 17, 1948, in the northeast corner of Ware County. This observation followed a period of relatively cold weather throughout Georgia and the eastern United States. Many of the author's field experiences have been obtained in areas where the Pine Siskin is a common winter resident, and it was not until consulting *Birds of Georgia* (1945) that it was realized that the siskin is usually rare in south Georgia.—JAMES H. JENKINS, 2012 Eljosa Ave., Waycross, Ga.

EDITOR'S NOTE.—Siskins were reported from several localities in extreme southern Georgia during the record-breaking invasion of 1946-47 (See Johnson *Oriole* 13: 1-2)

but there have been comparatively few reports of siskins anywhere in Georgia during the 1947-48 season.

ANATOMICAL ABNORMALITY OF AN EASTERN KINGBIRD.—Of a pair of kingbirds (*Tyrannus tyrannus*) collected 11 miles west of Chattahoochee (Jackson Co.), Florida, on August 9, 1947, the internal anatomy of the female was very much "out of order." The stomach, or gizzard, was located so far anteriorly as to occupy the position of a crop. It lay ventral to the base of the neck in the V-shaped cavity provided by the furcula, or wishbone; the duodenal portion of the small intestine joined the pylorus fully 10 mm. anterior to the syrinx, passing dorsal to the left bronchus as it continued caudad to join the remaining portion of the tract. No other physical abnormality was evident. Insect remains half filled the stomach. Before the collections, the female's behavior had seemed normal in every respect. Like her mate, she had responded to my "squeaking" with a volley of strident notes.—ROBERT A. NORRIS, *Department of Zoology, University of Georgia, Athens, Georgia.*

ON THE OCCURRENCE OF AN ALBINO FIELD SPARROW AT BLACKBEARD ISLAND.—An albino Field Sparrow (*Spizella pusilla*) was observed on Blackbeard Island on March 1, 1948. It was naturally a very striking bird and several other workers present were greatly interested in learning what kind of a bird it was. The bird was observed by the author at close range with a 7x35 binocular and it was found to have some dark feathering on the belly. The eyes did not appear pink. It stayed with a large flock of other Field Sparrows. No attempt was made to collect it since albinos and partial albinos are not too rare in the ornithological field; however, it should be worth recording.—JAMES H. JENKINS, 2012 Eljosa Ave., Waycross, Ga.

NEW LITERATURE

LIFE HISTORIES OF NORTH AMERICAN NUTHATCHES, WRENS, THRASHERS AND THEIR ALLIES.—By Arthur Cleveland Bent. U. S. National Museum Bulletin No. 195. Pp. xi + 475, plates 1-90, \$1.75.

This sixteenth volume in Bent's series on the life histories of North American birds treats the families Sittidae, Certhiidae, Chamaeidae, Cincidae, Troglodytidae and Mimidae. Among the species discussed are such common and well known Georgia birds as the White-breasted and Brown-headed Nuthatches, the Brown Creeper, the Carolina, House and Winter Wrens, and those three southern delights, the Mockingbird, Brown Thrasher and Catbird.

The plan and methods of presenting the various biographies is the same as used in previous volumes. As always the accounts are interesting and informative. Yet, one cannot read them without noticing the dearth of information concerning the habits of these common birds in Georgia and the deep South, and realizing the habits as observed in other regions are different from what they are here. This, of course, is no fault of the author since he invites contributions from all sections and individuals. The account of the Mockingbird was contributed by Alexander Sprunt, Jr., and has a distinct southern flavor.

This volume as is customary was printed in limited supply so those that desire a copy are urged to get it as soon as possible.—J. F. D.

COMMON BIRDS OF BALDWIN COUNTY, GEORGIA, AND VICINITY.—[By Mabel T. Rogers and Blanche Tait, illustrated by Clyde E. Keeler.] Milledgeville Audubon Society, Milledgeville, 1948. Paper wrapper, 3½" x 6", 1-32 pp. with 8 illustrations. 15 cents.

This attractively bound vest-pocket booklet was issued to assist beginners, especially Scouts and other school children, in learning the common birds of the region. Accordingly, it follows a simplified scheme but scientific accuracy is generally maintained. Beginning with a list of simple guides for field trips, the booklet follows with a Color Key of Common Birds, Key for the More Common Sparrows, Key for the More Common Woodpeckers, a section on descriptions of birds, and a final section on bird songs and calls. The very simple diagrams of birds, some in flight, are well done.

Although the purpose is elemental it is questionable whether this booklet, especially without colored plates, will be of much value to the beginner in identifying birds since the descriptions of many forms are too brief and vague for his comprehension. One wonders why such common sparrows as the Swamp and Bachman's were omitted from the key to the sparrows. The inclusion of the Orchard Oriole (females and immatures olive-green and yellow), Yellow-billed Cuckoo and Robin under "Birds with brown as the prominent color" in the Color Key will certainly prove confusing to beginners. The committee should be censured for issuing the booklet unsigned since such a procedure causes inconveniences and confusion for bibliographers. The persons listed above have been determined as its authors.—J. F. D.

NEWS

SPRING MEETING.—The eighteenth semi-annual meeting of the Georgia Ornithological Society was held at Jekyll Island State Park on April 24-25, 1948, with a total registration of 85 members and guests. Groups arrived on the Island during the day, registered at G. O. S. headquarters in the hotel lobby and then set out on short trips of exploration. At 6 p. m. the group met for dinner in the main dining room following which it adjourned to the chapel where the evening meeting was held.

The meeting was called to order by the President, Mr. William Griffin. The minutes were read and approved. Plans for breakfast, the field trip and the totaling of species near the dock at 10:45 a. m. was announced. Two awards to young members were described by Mr. Griffin: Jimmy Major chosen to become an honorary junior member of the A. O. U., and Ralph Calhoun chosen to receive the Georgia Science Talent award.

On nomination by the Committee the following Regional Vice-presidents were elected: Mrs. Charles Neal—Northeast; Mrs. R. E. Hamilton—Northwest; Richard Parks—Atlanta; J. Fred Denton—Augusta; Miss Catherine Weaver—Milledgeville; Mrs. T. J. Cater, Jr.—Macon; Gilbert R. Rossignol—Coastal region; Frederick V. Hebard—Southeast; and Herbert L. Stoddard—Southwest.

Mr. Ray C. Werner, Treasurer, reported a balance of \$269, and read a list of new members.

The Secretary was instructed by the President to write notes to Mrs. K. G. Berrie

expressing the Society's appreciation of her assistance as local chairman and regrets of the illness in her family; to the Burroughs family condoling the death of Mr. M. H. Burroughs; and to Ivan R. Tomkins with sympathy at the death of his wife.

Miss Malvina Trussell, Program Chairman, introduced Mr. Harry Beadel who showed several colored moving films of the bird life near his home on Lake Iamonia just south of the Georgia line. Mr. Herbert Stoddard gave interesting commentaries with the films. These films of superior quality were of particular delight to all present. Following the films Mrs. Margaret D. Cate of Sea Island delivered a most interesting history of Jekyll Island in a very pleasing manner.

Sunday morning dawned bright and clear with very little wind. Many members in small groups were out observing before the 7:30 breakfast. Following breakfast two bus loads went to the beach to observe. The final count showed 91 species identified, 34 of which were water birds. The Painted Bunting present in abundance is most characteristic of the Island.

LOUISIANA ORNITHOLOGICAL SOCIETY.—Largely through the efforts of Earle R. Greene and several outstanding ornithologists of New Orleans, the Louisiana Ornithological Society was organized December 6, 1947. Patterned along the same lines as the G. O. S., which Mr. Greene was instrumental in founding, its purposes are very nearly the same. The officers for 1948 are as follows: Earle R. Greene—President; George Lowery, Jr.—Vice-president; Gladys S. King—Secretary-Treasurer; Francis B. Eastman, Buford Myers, Jr., and Robert M. Lockwood—Directors. The G. O. S. hopes for the L. O. S. a long and productive existence.

DR. MAYFIELD RETIRES.—Dr. George R. Mayfield, nationally known ornithologist and conservationist and enthusiastic G. O. S. member, has retired from his position as Head of the German Department at Vanderbilt University. After 43 years of teaching Dr. Mayfield is now free to devote full time to his nature hobby. He writes that he plans to give the birds, particularly the Mockingbirds in which he has long been interested, no peace.

ANNOUNCEMENTS

NEW REGIONAL FIELD REPORT.—Dr. John W. Aldrich, Editor of *Audubon Field Notes Magazine*, writes that plans are being made to reorganize the areas included in various regional reports so as to give better coverage of the country. It is proposed to extend the present Carolina Region southward to include most of Georgia and a part of Florida, this region to be called the South Atlantic Coast Region. The mountains of Georgia will be included in the Appalachian Region. Dr. J. Fred Denton of Augusta will serve as editor of the regional report for this new region. It is hoped that the cooperation of all active G. O. S. members in furnishing reports from their respective localities can be secured. Since Georgia occupies a key position in this South Atlantic Coast Region it will be necessary to have a rather complete coverage of the State in order to get a good picture of the seasonal changes in the area.

INFORMATION DESIRED.—Frederick V. Hebard (1500 Walnut St. Bldg., Philadelphia 2, Pa.), is making a study of "injury feigning" in all species of North American birds. He would like to receive detailed reports from G. O. S. members on their own observations of such displays.