

in late autumn, winter, and early spring, many White-throated Sparrows congregate nightly for shelter in the dark recesses of these shaggy evergreens. Ere they have settled for the night their clear resonant notes fall upon the ear in confused rehearsal, but they are subdued to gradual decadence with the deepening shadows, until only now and then a single note breaks the stillness; then there is silence and night has fallen.

---

## THE DISTRIBUTION AND MIGRATION OF *ZONOTRICHIA QUERULA*.

BY W. W. COOKE.

WHILE living in Northern Minnesota I shot a bird, late in the fall, which was with difficulty identified. The 'Key' carried it straight to *Zonotrichia*, but it had no white crown, no white throat, and no black head; hence, how could it belong there? At last it was discovered that, like the play of Hamlet with the part of Hamlet left out, this was a Black-headed Sparrow minus the black head. The acquaintance then formed has ripened into a lasting friendship, and from that time the jaunty bird has been an especial favorite. It came to me under several circumstances tending to excite interest. It was the first true western bird I had ever seen, nor could I learn from any books at hand whence it came or whither it went; no one had ever seen its nest and eggs, and even its winter home was but imperfectly known. For three years its coming and going in the North were noted, and then after quite a long separation it was again greeted last fall in its winter home near the southern boundary of Indian Territory. As might be expected, its movements during the winter were watched quite carefully, and it is the intention of the present article to add to these observations all that is now known of its distribution and migration.

Our subject was first described by Nuttall from Westport, Mo., in 1840, and for the next thirty years not much was added to our knowledge of it. Up to 1873 most of the notices respecting it were from the Missouri River, along which it had been traced for

nearly a thousand miles; the other notes are a few scattered ones from Iowa and Dr. Coues's observations in the Mouse River region of Northern Dakota. So persistently had it been noted from the Missouri River, that Dr. Coues, in 'Birds of the Northwest,' gave its habitat as "Region of the Missouri. East to Eastern Iowa." Since then it has been noted from widely separated districts, but its whole bibliography is limited.

Let us first trace out its habitat. Toward the west I am unable to give its extension with any degree of precision. Mr. Goss, in his late catalogue of the birds of Kansas, gives it as a winter resident in Kansas, and as common in Southern Kansas. Dr. Weston, of Ellis in Western Kansas, writes me that they occur there in fall and spring, and are sometimes abundant. It is probable, that, like the other birds of the Plains, they extend either regularly or occasionally to the foothills of the Rocky Mountains.

To the eastward our knowledge is more definite. There is no Louisiana nor Arkansas record that I have seen, but in Western Missouri they are common, and pass eastward to about the middle of the state; the most eastward record I possess being that of Mrs. Musick, at Mount Carmel, Mo., who found both the first and the bulk April 3, 1884. In Iowa it ranges a little farther east, being common in the western and middle parts, and a straggler to the eastern part, one being sent me for identification from Mitchell, Iowa, near the Wisconsin line. It has even wandered twice to Illinois, having been taken at Bloomington and at Normal. The whole of Minnesota has been preëmpted by our subject, as I have records from the four corners of the state; and last fall it made bold to cross into Wisconsin, only to yield its life in the interest of science at Trempeleau. We also have a former Wisconsin record by Dr. Hoy from Racine.

If we seek its southern boundary we must journey afar. Without record from intervening territory, Mr. Dresser secured two specimens at San Antonio, Texas, and later Mr. N. C. Brown tells us in the 'Bulletin' that it was an abundant winter resident at Boerne, Texas, thirty miles from San Antonio. In his careful and extended review of the birds of Galveston and vicinity (Bulletin, 1882) Mr. Nehrling does not give it; hence we may conclude that if it does reach Southeastern Texas, it must be as a straggler.

Mr. G. H. Ragsdale writes me that it is an abundant winter bird at Gainesville, in Northeastern Texas, and he has left a record

(Bulletin, III, July 1878, p. 92) that during the winter of 1876-77 it disappeared, being driven south by the cold weather. From the printed records, then, we may say that its southeastern limit is somewhere near the middle of Eastern Texas.

The northern limit is entirely indeterminate. It reaches into British America, but how far we know not.

It will be thus seen that its habitat may be characterized as: Plains of the United States, from Southwestern Texas to British America. East rarely to the Mississippi River. Accidental in Wisconsin and Illinois.

We turn now to its migration. Dr. Coues speaks of its appearing in Northern Dakota late in September. At White Earth, Minnesota, I used to note its arrival about the middle of that month, and it loitered as long as possible, leaving just before the first snow fell. During its sojourn it was the commonest and most conspicuous species. Last fall the first one reached Manhattan, Kansas, on October 27, and the species became immediately abundant, remaining so until the latter part of December. Like many other birds, the very severe weather of the last of December and the first of January sent it farther south than usual. At Pierce City, Mo., it was abundant in the fall, but after the 2d of January none were seen. At Darlington, Ind. Ter., it was present all winter, and the same was true at Caddo, Ind. Ter., and at Gainesville, Tex.

For an account of its behavior last winter at Caddo, Ind. Ter., thirty miles north of Denison, Texas, I think I cannot do better than quote from my diary:

Nov. 8. In the evening two birds alighted on the fence in my back yard; one having the black head- and throat-patch, the other with no really black feathers. They were the first of the season.

Nov. 24. A small party seen.

Dec. 25. Common. The arrivals from the north seem to be about all in. It is an abundant winter resident of Caddo. I found them to-day even slightly outnumbering *Cardinalis*. They were in small parties, quite evenly scattered along the water-courses. As I passed they would keep flying ahead of me until several parties had united, making a flock of forty to fifty birds. *Cardinalis* acted in the same way. Contrary to my expectations, I found some of the males in full dress — with the black head and jet black throat. Possibly one out of a dozen was thus attired,

while probably half of them showed black feathers among the brownish ones of the throat and breast. The rest had no sign of a black throat-patch, and but little black on the head. Entering suddenly an open spot in the woods I surprised a family party of six or eight, sitting quietly on the bare ground. This was the first time I ever knew them to rest so when bushes were near. They scurried off into the thick brush as if ashamed at being caught in such a humble position.

Jan. 8. Determined as a song of the Harris's Sparrow, a note which I had formerly supposed was uttered by the Cardinal, in whose company it is usually found. This Sparrow now has two notes, one a clear whistle, something like that of *Z. albicollis*; the other a queer, chuckling note, unlike any other song with which I am familiar. By throwing some bird-seed on the south porch of my house we had a whole colony of Sparrows in plain sight under the window. A party of some twenty Harris's Sparrows almost monopolized the free lunch; but one bright Cardinal came occasionally to take a peck, and among the jaunty, stylish *querula* could be seen one or two White-crowns in plain brown head gear, and the still more humble Tree Sparrow, which, however, made up for its lack of beauty by additional industry, devouring more seeds to the minute than any of the others.

Jan. 12. The *Zonotrichiæ* seem to be rather queerly dispersed in this country. *Leucophrys* is the least common, and is found almost entirely in the weed patches about town and on the edges of the prairies. *Querula* comes next in numbers, and most of them remain in the thickets along the water-courses; a few stray into town, especially in the coldest weather and still fewer into the heavy timber. *Albicollis*, most numerous of all, keeps strictly to the bottom-land, and even there I found them to-day only in those parts of the timber where there was a heavy undergrowth for shelter. About a hundred *albicollis* were seen to-day in some four or five parties. These parties always contained several other species of Fringillidæ, but their combined numbers were hardly more than the Peabodys. They consisted of Tree Sparrows, Black Snowbirds, Song Sparrows, and Field Sparrows. Not a *leucophrys* nor *querula* was identified after I reached the heavy timber.

Feb. 15. A party seen—the first for some time; they were all dull-colored — not a black head among them.

Feb. 18. A few are around, but whether the rest have gone south or north I do not know. Not many black heads seen yet, though many show black feathers on the crown.

Feb. 23. A few seen in the timber, but more common on the borders of the woods.

Feb. 26. The scarcity of *querula* during the early part of this month was probably due to their moving southward; they are now back again and are spread all over the small thickets.

March 5. Is spreading; saw a large party feeding on the ground in a barn-yard on the prairie.

March 10. Last night was perfect for migration — moderate south wind, perfectly clear, and moonlight. This morning shows a decided decrease in *F. hyemalis*, *S. montana*, and *Z. querula*. Indeed, I think the bulk of these species departed last night.

March 11. Almost the whole have gone, only a few seen.

March 13. Large arrivals from the south.

March 15. About the most numerous of any time this spring.

March 19. Still seen in small parties.

March 25. A single bird, the last seen.

Passing now to study its movements at other points, we find that in 1877, Mr. Brown speaks of the last one leaving Boerne, about the first of April. This year the northward movement commenced about the first of March, and the bulk left Gainesville, Tex., on March 12; three days later the transients were at their height at Caddo; those which spent the winter at Caddo left March 10. The bulk arrived at Pierce City, Mo., March 17, and the next day at Manhattan, Kans. At Alda, Neb., they were seen March 23, and then comes more than a month during which there was no advance. They appeared at Vermillion, Dak., on May 3, and just two weeks later, at Augustville, Dak. They had previously occurred May 10, at Frazer City, Minn. The bulk is seldom more than four or five days behind the van. Some very late migrants were noted this spring; one was seen at Gainesville, Tex., May 5, and another at Mahattan, Kans., May 20.

The area of greatest abundance is the country for seventy-five to one hundred miles on each side of a due north and south line connecting Pembina, Dak., with San Antonio, Tex. Its normal winter home is from Central Kansas southward, but it is not uncommon for a few to brave part or the whole of the winter in

the extreme northern part of the State. Its summer home is yet shrouded in obscurity, but it is likely that the persistent efforts of collectors will soon put us in possession of the material for completing its life history. As has already been remarked, its nest and eggs remain unknown, but several notes are in hand bearing on its summer abode.

Professor Aughey in his 'Notes on the Nature of the Food of the Birds of Nebraska,' p. 29, says: "Common in Eastern Nebraska along the Missouri. Have not noticed it in winter, but have frequently seen the young in the northern part of the State." If by this he means that these young were reared in the state, he is undoubtedly in error. As negative testimony against it, the excellent and reliable observer, Mr. G. S. Agersborg of Vermillion, Dak., writes me, that during seventeen years he has scoured the country for fifty miles around and has never seen a specimen in summer, though common in spring and fall. Dr. Coues is unequivocal in his statement that none spend the summer south of lat. 49°. This is probably correct for the Mouse River region in Dakota, about which he was writing, but may require some modification when applied to Minnesota. It will not be surprising if its summer home shall yet be found in Northern Minnesota, in the Lake of the Woods region, since Dr. Hatch, the authority on the birds of that State, writes me as follows: "*Z. querula* is not so often met with here in spring as in fall migration, and then mostly in the Big Woods; sometimes along the belts of timber of the prairie sections. I have not personally seen it at any point beyond these woods, but I am satisfied that it is a summer resident in the northeastern portions of the State." Upon asking the grounds of this belief, he answered: "*Z. querula* has come under my notice under circumstances which led me to believe that their nests were made within the boundaries of the State, perhaps not far removed from those of *albicollis*, but I have never seen a nest, nor do I personally know any one who has. The lateness of the date at which they have sometimes come here, together with the advanced state of ovulation, is the principal basis of my conjecture, as well as their association with birds, such as *albicollis*, known to breed about two hundred miles north of Minneapolis."