

A STUDY OF THE SAVANNAH SPARROW IN WEST VIRGINIA

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To me, the Savannah Sparrow (*Passerculus sandwichensis* subsp.) has been an interesting bird ever since I became familiar with it. That was one reason why I chose (1) to make a study of this species in 1934. The other reason was that, prior to 1934, there were no nesting records of the Savannah Sparrow for West Virginia, and I hoped to find a nest of this species.

Until June, 1931, we did not know that this species was a summer resident in the West Virginia Panhandle, which includes Hancock, Brooke, Ohio, and Marshall Counties. In the last week of that month, Sarah Hine saw a strange bird at Oglebay Park, Ohio County. Reinhold Fricke of the Carnegie Museum, was at Oglebay at the time, so he visited the spot where the bird had been seen, and found both a male and a female Savannah Sparrow. Fricke collected the female (2) which proved to be an Eastern Savannah Sparrow (*Passerculus sandwichensis savanna*). Examination showed the bird had been brooding.

During the summer of 1932, this species was listed occasionally at Oglebay. In the summer of 1933, it was listed more frequently. I found at least two different males singing in separate parts of the Park, during this period.

In January, 1933, Dr. Sutton's annotated list (3) of birds of the West Virginia Panhandle, was published. He showed the Savannah Sparrow as "decidedly rare and local as a summer resident," giving no nesting records. Sutton also pointed out that the Panhandle contains Transition Life Zone birds, as well as Upper Austral Life Zone birds. Since Dr. Chapman (4) showed the Eastern Savannah Sparrow as breeding in the Canadian and Transition Life ones, we might expect to find it breeding in the West Virginia Panhandle.

All of these things led me to believe that the Savannah Sparrow nests in this locality, so in May, 1934, I started to look for a nest of this species.

I was not successful until May 26, when, in a field at Oglebay Park, Ohio County, I flushed a female Savannah Sparrow from its nest, when I was but five feet away. I immediately discovered the nest, the first to be recorded in the state of West Virginia. It contained five eggs.

This record was published in the June, 1934, issue of the *Redstart* (5)-(6), the July, 1934, *West Virginia Nature News* (7), and in the December, 1934, issue of the *WILSON BULLETIN* (8).

A. B. Brooks, Oglebay Park Naturalist, made several photographs of the nest on May 27.

While visiting this nest, I found another pair of Savannah Sparrows in a field adjacent to the one in which I found the nest. I tried several times to find the nest of these birds, and on June 12 I was rewarded for my efforts. This nest contained two young birds and one sterile egg. When I returned to the nest on June 13, the young had flown, so no photographs of this nest were made.

The balance of this paper is devoted to the information gathered in my study of this bird. I am indebted to my associates in the Brooks Bird Club for some of this information. These associates, whose names appear in this article, are Sarah Hine, A. B. Brooks, Lloyd Poland, Russell West, Charles Conrad, Clyde Upton, and James Handlan.

To my knowledge, the Savannah Sparrow does not occur in West Virginia in winter. At least, I have not been able to find any winter records of this species for West Virginia. I am quite sure that it does not winter in the Panhandle, because neither Dr. Sutton nor the members of the Brooks Bird Club have listed it during that season, and they cover a goodly portion of the Panhandle.

This bird reaches the Panhandle in its spring migration around the last of March or the first of April. The local migration records of this species are rather incomplete, since they cover only 1933 and 1934, but I believe they are approximately correct. In 1933, this species was first listed on March 28, while in 1934, it was not listed until April 7 (9). The earliest migration record for each spring was made near water. In 1933, Russell West found this bird at Beech Bottom Swamp, Brooke County, for the first record, while Charles Conrad and George Flouer made the first 1934 record at the same place. This indicates that the species migrates in spring along or near bodies of water. I recall distinctly that in 1933 and 1934, we did not find a Savannah Sparrow in its summer habitat at Oglebay Park, which is some distance from any bodies of water, until several weeks after the bird was seen at Beech Bottom Swamp, even though we were constantly watching for this species at Oglebay. At the Wheeling Country Club golf course, which has small bodies of water scattered over it, this bird was listed on April 8, 1934, one day after it was recorded at Beech Bottom Swamp.

Apparently the Savannah Sparrow is a spring migrant in scattered parts of West Virginia. It certainly occurs in migration at Terra Alta in Preston County, where it is a summer resident. I was at this

place for two weeks in the summer of 1933 and found several pairs there. Bibbee (10) states he has found this species in spring migration in Wood County. The Panhandle, Preston County, and Wood County are all some distance apart from one another.

In West Virginia, the summer habitat of the Savannah Sparrow is in large upland fields and in large fields bordering bodies of water, at elevations of approximately 1175 feet or more. The seven places in Ohio County where this bird is known to reside during its breeding



FIG. 5. Nest of the Savannah Sparrow, Oglebay Park, Ohio County, W. Va., May 27, 1934. Photographed by A. B. Brooks.

season all come under the classification of large upland fields. However, at Terra Alta, I found this species in large fields by Lake Terra Alta as well as in upland fields some distance from the lake. As to elevation, the fields at Oglebay Park where I found the Savannah Sparrows nesting, are approximately 1250 feet high. Another field at Oglebay, where I found a pair of these birds, has the same elevation. The field at Oglebay where this species was recorded in 1931, 1932, and 1933, and where I finally found it in 1934, has an elevation of about 1175 feet. At Carter's farm, a short distance from Oglebay, I found the bird at an elevation of 1300 feet. Clyde Upton reported Savannah Sparrows at the Wheeling Country Club golf course in the summer of 1934. This place is adjacent to Oglebay and the elevation there is about 1175 feet. Charles Conrad reported this species at Romine's Farm, a few miles from Oglebay, during the same period

and I believe this farm is approximately 1200 feet high. At Fawcett's farm about five miles from Oglebay, A. B. Brooks found a Savannah Sparrow in the summer of 1933. This farm is the highest in Ohio County, the elevation there being 1385 feet. The points I have referred to are all rather high for this region, the average elevation for Ohio County being about 700 feet, I believe. At Terra Alta, West Virginia, where the elevation is close to 3000 feet, I found several pairs of these birds in the summer of 1933.

The Savannah Sparrows in the West Virginia Panhandle must begin nesting during the latter part of May. I found a nest on May 26, when the complete set of five eggs was in it; and another on June 12, when the young were almost ready to leave the nest. Forbush (11) gives May 21 to June 29 as nesting dates for this species in Massachusetts, while Chapman (4) gives May 19 as the nesting date for Utica, New York.

The two nests which I found were slightly different in construction. They were both in small cup-like depressions in the ground, but the first was more cleverly concealed than the second. The first nest was at the foot of a stalk of grass, and did not protrude above the ground. It was made of a few fine grasses, very neatly placed in a cup-like hole in the ground. The second nest was bulkier, protruding slightly above the ground. It was made of coarse grasses lined with finer grasses. The two nests were at the same elevation, and were separated by a road. The distance between them was about 150 yards.

There are not enough data available to say how many eggs the Savannah Sparrows in this region lay. One nest I found contained five eggs, while the other nest must have had three eggs in it, since there were two young birds and one sterile egg in it when I found the nest. Reed (12) and Roberts (13) show this species as laying three to five eggs, and my records check with these figures. However, some other authors give slightly different figures.

The eggs of this species are ovate in shape. It cannot be said that the eggs are one particular color, because of their variation. The many authorities on bird eggs give quite different descriptions of the color of Savannah Sparrow eggs. The eggs in the first nest were all I had to observe, since the sterile egg in the other nest was covered with excreta. However, of the five eggs in the one nest, four of them were very pale brown with cinnamon-brown spots about the larger end. The other egg had a bluish tinge, while the spots on it were cinnamon and more pronounced. It may be of interest to note that the one egg which was colored more brilliantly than the others was

the only fertile egg in the nest. I can find no information to the effect that fertile eggs differ from infertile eggs in color, but that was certainly true in this instance, although it may have been only an accident.

The fact that the two nests contained five infertile eggs and three fertile ones, is very interesting. It is known that birds on the edge of their breeding range lay a high percentage of infertile eggs. The fact that the nests I found contained a large number of infertile eggs, may indicate that the West Virginia Panhandle is on the edge of the breeding range of the Savannah Sparrow, and, since this range lies to the north, the Panhandle would be on the southern edge. Allen (14) explains that birds on the edge of their breeding range, are not so likely to be in mating rhythm as those toward the center of their breeding range; and, as a result, the birds on the edge of their breeding range are less likely to produce fertile eggs. There must be some reason for such a high percentage of infertile eggs (62.5 per cent), and Allen's explanation seems plausible.

My nesting records extend the breeding range of this species approximately forty-five miles southward along the Ohio River in this district. Formerly, there were no nesting records below Columbiana County, Ohio, in the Upper Ohio Valley.

I regret to say that I do not have any data on the rearing of the young of the Savannah Sparrow. I watched the first nest for three weeks waiting for the eggs to hatch, but they didn't hatch. Since, according to Roberts (13), the incubation period for this species is twelve days, I felt sure the eggs would not hatch after twenty-one days, so I collected the nest after that much time had elapsed. There was only one egg which was not cracked by that time, so I broke it and found a partially developed young bird in it. Apparently the adult birds had allowed this egg to cool after the embryo had developed to a certain extent. Of the seventeen days in which I visited this nest, I found one of the birds on it nine times. The adult was on the nest as late as June 12, or seventeen days from the time of my finding the nest.

The other nest was not found until the day before the young left it, so, I had no opportunity to observe how these young birds were raised. The best I could do was to make notes on the plumage of the juvenile birds.

Although I cannot say definitely, since the male and female Savannah Sparrows have practically the same appearance, I believe the female did all of the incubating in the first nest. At least, when

I was able to distinguish between the two adults, I found that the female was or had been on the nest.

The two juvenile Savannah Sparrows which I observed, were a mixture of brown and yellow. The base of the bill was bright yellow, and the underparts were yellow with brown streakings. These streaks were not as prominent as those on adult birds of this species. The back was mostly brown, with some yellow parts. There was just a suggestion of the yellow streak over the eye. Altogether the young birds were much brighter in color than the adults.

In studying the habits of this species, some interesting things came to light. One of the first things to impress me was the action of the female bird when I approached its nest. It would allow me to come as close as five feet from the nest, before it would leave it. Then the bird would hop from the nest and drag its wings, pretending to be wounded. After it was about twenty-five feet away, it would run through the grass like a field mouse. While this was going on, the male would keep chirping insistently, scarcely pausing at all. The female chirped only occasionally and even then not so loudly as the male.

The Savannah Sparrows in this region are very scary. I could not get closer than fifteen feet to any of them, except when one was on the nest or when young were in the nest. Blanchan (15) says this bird, in the north, loses the shyness which makes it so little known in the southern part of its range. It certainly is very shy in this section, and the same is true of this species at Terra Alta.

When the Savannah Sparrow is flushed from the nest, and the observer retires to a spot about fifteen yards away, the male bird chirps constantly, attracting as much attention as possible. If the observer keeps his distance for a while, the female will gradually work her way back to the nest, crawling through the grass for some distance, while her mate continues chirping. I saw this done a number of times and the routine never varied, except when the bird was so frightened that it would not return to the nest for a long while.

If this bird knows you are watching it, it will peek at you from some bush, with only its head and neck visible. It will twist its head around to get a better look at you, but will keep fairly well hidden. This habit helps in identifying the bird.

On several occasions, I noticed the adult Savannah Sparrows giving a harsh "bss" when I was at their nest. This was a new note to me, and upon referring to various authorities, I found only Forbush (11) recorded this utterance. He said the birds give this note

when two of them are quarreling, but I think otherwise. One bird will give this note when its mate is not near, so it could hardly be called a quarreling note. I am sure it is an alarm note, since I heard it only when I was very near the nest.

The ordinary chirp of this species is a sharp "*tsip*". Its song is generally recorded with three introductory notes, but the birds in this region almost always give four introductory notes in their song. Sometimes the observer does not hear one or two of these first notes, if he is not close to the singing bird. I find only Eaton (16) shows that this species gives three or four beginning notes in its song.

While the Savannah Sparrow is essentially a bird of the fields, it is sometimes found in small trees, bushes, and on fence posts. This bird has a number of favorite perching places, and there the male sings frequently. Only twice did I ever hear a Savannah Sparrow sing from the ground, once at Oglebay and once at Terra Alta.

Apparently the Savannah Sparrows in West Virginia nest here only once a year. On July 14 and July 21, 1934, I visited four stations in Ohio County and could not find a single Savannah Sparrow. I am sure I would have seen one had any been there, for I knew a number of their favorite perches. James Handlan, who spent most of the months of July and August, 1934, at Terra Alta tells me he did not list a Savannah Sparrow there after July 20. This indicates that the birds move to another region after their first nesting period is ended.

In concluding this paper, I would like to call attention to several things which I consider important. First, that the Savannah Sparrow does nest in West Virginia. Then, that the West Virginia Panhandle may be on the southern edge of the breeding range of this species. Also, that my nesting records extend the breeding range about forty-five miles southward in the Upper Ohio Valley. Another thing worth considering is that this bird may be extending its range southward. Either this is the case, or we are finding the bird more because we have become more familiar with it. Campbell (17) found similar circumstances in Ohio and he thought it likely the Savannah Sparrow was extending its range southward. I am not so sure that this is the case in the Panhandle. Almost all of the present stations in Ohio County are fields that have not been covered previously to any extent by ornithologists, and it is possible we may have overlooked this species.

It might also be well to consider the fact that the Savannah Sparrow requires an elevation of 1175 feet or more in this region.

Christy (18) found this species in Western Pennsylvania only at an elevation of 1200 feet. I am sure that elevation plays a large part in the Savannah Sparrow's selection of breeding sites, as there are numerous fields in this region which would be suitable for this species, were it not that they are too low.

I consider the alarm note of the Savannah Sparrow an important discovery, as is the song which I have recorded different from previous descriptions of this bird's song.

Finally, this species is no longer "rare as a summer resident" in the West Virginia Panhandle. I would call it uncommon in this region, and I would say that it is still local, since all of the summer stations of this bird in the Panhandle are within a radius of five miles.

As to its status in the state of West Virginia, I think Brooks' classification of "decidedly rare" (19) should be changed to "rather rare and local in distribution".

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