

consists chiefly of ants, which are fed to the young in the form of a paste. Many thousands of ants must be consumed by the family in a single day.

It is truly a wonderful experience, not devoid of little thrills and excitements, to watch and picture such handsome birds in the course of their parental routine, almost at arms length; and the beautiful enlargements on the walls in my home serve to recall the many pleasant hours which I have spent in field photography.

Kansas City, Missouri, September 21, 1919.

THE RUSTY SONG SPARROW IN BERKELEY, AND THE RETURN OF WINTER BIRDS

By AMELIA S. ALLEN

ON March 29, 1919, a Yakutat Fox Sparrow (*Passerella iliaca meruloides*), one of half a dozen Fox Sparrows which come regularly to my window for food, was accidentally caught in the house. I took the opportunity, before setting it free, to band the bird, as I wished to get some evidence as to the identity of the individuals which come from year to year to this particular feeding-table. This banded bird remained several weeks after he had been marked, but emigrated, about April 21, with the rest of his kind, no doubt to Alaska to spend the summer months. In the fall, returning Fox Sparrows were noted as early as September 25, but it was not till November 3 that the banded Fox Sparrow was seen.

This is the first instance in which I have been able to prove, what I have long suspected to be a fact, that a migratory bird has returned to a favorite niche after its long journey to and from its summer home. The behavior of the group of birds which feed at my table has been very convincing to the daily observer, but an actual tag brings the matter quite up to certainty. These half dozen Fox Sparrows are practically alike, presenting no marks to differentiate male from female, old from young. No doubt part of the number each year are birds of the year, but now I am sure of at least one adult that has been here before.

Among the Golden-crowned Sparrows a few are definitely in juvenal plumage. These, during the early part of the season, are quite nervous when they come to the table, raising the crown feathers and stretching the neck and legs, alert in every muscle. This attitude contrasts strongly with the squat position of the birds in adult plumage which settle down to a comfortable at-homeness which argues very favorably for their having been here before.

It was, however, the case of the Rusty Song Sparrow (*Melospiza melodia rufina*) which made me feel most firmly convinced that the same birds were returning year after year. I first made the acquaintance of the Rusty Song Sparrow on January 5, 1915. It was easy to see that the newcomer was not a Santa Cruz Song Sparrow, for he was perceptibly larger and at a little distance seemed to be colored a uniform reddish brown except for a light line over the eye. Closer scrutiny revealed the fact that the reddish brown of the back was streaked with a darker shade and that the breast was buffy, densely spotted with brown. These

colors all blended together instead of being contrasted as the black, gray, brown and white are in the Santa Cruz Song Sparrow's plumage. True to the northern type, the Rusty Song Sparrow was also more deliberate and less nervous in his motions, though at the same time more shy than his cousin. He seldom appeared with the first birds that crowded in as soon as the meal was ready. He was often first discovered gleaning from the ground the seeds that had been brushed from the table by excited rivals. Later in the day he usually had everything to himself and showed by his confidence on the table that his shyness was due to the proximity of the other birds rather than to my presence at the window.

I was much interested in observing this bird, since it was the only one of its kind to partake of my hospitality and, so far as I could discover, the only one so far recorded in this immediate locality. So it was with a genuine feeling of regret that I noted his absence as the spring migration season arrived (March 17, 1915). However, when the fall migrations were nearly ended and the winter birds were settling down to regular feeding, he suddenly appeared again, making himself quite at home, coming and going just as he had been accustomed to do in the spring. Of course, I cannot state positively that it was the same bird, but it seems to me very probable. No one would question whether it was the same bird that appeared from day to day, since there was never more than the one. The rarity of the species argues strongly also in favor of the thesis that it was the same bird that returned on October 29, 1915.

With the exception of an absence of a few weeks in midwinter (his return was noted on January 18, 1916), the big brown song sparrow remained until March 27, 1916, when the urgency of the migration instinct again sent him to his summer home. The next fall he did not wait so long, but returned to his chosen winter resort on September 29. I fear that it was a disappointing year for him, for illness in my family interfered with the regularity of meals for the bird-guests during the fall, and I was away from home in the spring. Absences of the Rusty Song Sparrow were noted several times during the fall, and though the birds were fed during the spring (1917), he may not have been among the guests. This may account for the failure of the bird to return in the fall of 1917. Indeed, I supposed that I had seen the last of him. So it was with quite a thrill that I found him again feeding quietly at the table on March 2, 1918. There was evidently time to spare before completing his northward journey, for he remained until March 27.

In the fall he was back again in his chosen niche by October 29 and remained till December 26. I made sure that he was well fed, but for some reason he was not seen after that date, not even during the spring migration in 1919.

On September 23, 1919, a Rusty Song Sparrow was seen in the tree above the feeding table busily eating worms, but he has not been seen again to date. I still feel doubtful of his identity, for if it was the same bird, one would expect him to recognize the fact that seeds and other food to a song sparrow's taste were spread on the table below. But leaving out of account this year's sparrow enough evidence has accumulated during the five seasons that the Rusty Song Sparrow has spent here, to give rise to many interesting conjectures and questions.

The range of this particular bird is supposed to extend from southern Alaska to California, the southernmost record in this state being from Riverside (see Grinnell, *Distributional List*, p. 123). It is resident throughout the year in

Washington, Oregon, and British Columbia, but in Alaska it is a summer visitant only (see Swarth, *Alaska Expedition of 1909*, p. 89). Mr. Swarth's recent study of the different races of Fox Sparrows shows that those which pass the summer farthest north have their winter homes in the southern part of the range of the group as a whole. Some other birds show the same tendency. It is easy in Berkeley to observe the migration of Pileolated Warblers after the race which nests in this locality has settled down to domestic life.

If the same thing happens in the case of the Rusty Song Sparrow, it would seem probable that my visitor summers in Alaska, in the only part of the range which does not support these birds during the winter months. A feeding-table in California has proved an attraction which has led the bird to return year after year. But he has never brought another of his own race with him. How much longer will he come? How many years does a migratory bird live?

The evidence presented by the return of the banded Fox Sparrow and the Rusty Song Sparrow seems to show, in addition to the wonderful sense of direction which guides birds in their migrations, a very strong attachment to a locality as long as favorable conditions exist there. They have proved that they can find their way from one spot to another perhaps thousands of miles away and back again to the same spot. If they can and do return to their winter niche, it seems to me not unreasonable to suspect that they may do the same thing in the summer time. Many of the arguments recently presented favoring the theory of a permanent marital tie among birds seem to me to point to the probable remating of a large number of former pairs as brought about by this attachment to a definite locality. Changes effected by tragedies and by the influx of the new generation might account for exceptions to a general rule. Until, at least, more evidence is collected as to the actual return of birds to the same locality, the question of frequent re-mating is not disposed of, no matter how weak the biological evidence for a permanent marital union may be.

Berkeley, California, December 8, 1919.

A PECULIAR FEEDING HABIT OF GREBES

By ALEXANDER WETMORE

MANY ornithologists have commented briefly upon the fact that quantities of feathers almost invariably are present in the stomachs of grebes, a peculiarity that has been without apparent explanation. The present writer through reading and personal observation has been familiar with this condition for many years, and recently, during a study of the food of our North American Grebes (for which the stomachs of nearly four hundred individuals were examined), has had it brought to his attention most forcibly. The following notes based upon personal observation, while presented as theoretical, may be of assistance in throwing light upon the reason for this strange diet.