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## WINTER BEHAVIOR OF TWO SEMI-ALBINO WESTERN ROBINS By JOHN B. PRICE

The fact that each pair of Eastern Robins has its own feeding territory about its nest during the nesting season is now well known (Butts, Auk, XLIV, 1927, p. 329). The same is in all probability true of the Western Robin (Turdus migratorius propinquus), although as robins rarely nest on the Stanford University campus the writer cannot definitely so state. Also well known is the fact that robins form large flocks after the breeding season and that thousands of these birds roost night after night in certain groups of trees, leaving each morning to fly miles to forage and returning to the roost each evening. Previous to last year the writer had always supposed that each morning the robins spread out in haphazard manner over the surrounding country, shifting from place to place during the day and from day to day. It seemed unlikely on the face of it that during the winter season each individual robin should have an individual feeding territory. In any case there seemed little chance to learn much about the robin movements at Stanford as these birds do not enter the bird banding traps and so cannot be marked for individual study by stain or by colored bands.

It was with great interest therefore, on January 19, 1932, that the writer observed a semi-albino robin with a flock on the lawn in front of Jordan Hall. The bird (in this paper called White-head) had conspicuous white spots on the head, back and breast which served as identification marks. The writer hardly expected to see it again; but to his surprise he observed it every day for over a month, from January 19 to February 23 (except on February 6, 7 and 8). A strange fact was that it was always on the Jordan Hall lawn, and during the month of observation it was never once seen on the neighboring lawn in front of the Psychology Building although about fifty other robins regularly foraged there. Furthermore, it was always seen on the middle portion of the lawn, occasionally going into the bordering bushes. This feeding territory had an area of about 400 square yards and the bird was never observed to feed elsewhere.

The robins paid but little attention to persons crossing the lawn, only moving a few yards out of the way and continuing their search for earthworms, and if too hard pressed going into the bordering bushes. The writer once tried to drive Whitehead on to the other lawn but did not succeed. The robin kept about ten yards ahead of him as he walked after it but doubled back upon reaching the boundary of its territory. Finally the writer ran at the bird which then flew up in a nearby tree; but in two or three minutes it came down to the same portion of the lawn. In its flight, feeding, and everything except color it seemed in all respects to be normal.

About fifteen other robins fed on the same lawn as White-head and about fifty on the Psychology lawn. It was difficult to count the exact number or to be sure this was the same day after day, as some of the birds were always in the nearby bushes. The white-headed robin did not have exclusive possession of its portion of the lawn. A few other robins fed there but they were never very close together. If another robin approached too closely, White-head would drive it a few yards farther on. On February 12 instead of the dozen or so there before, over fifty robins were seen on the Jordan Hall east lawn. The newcomers may have been previously feeding on berries in the nearby oval and moved to the lawn when the berries were exhausted. Many of the newcomers were in White-head's territory and it was very vigorous in combating them. During a three-minute interval in the late afternoon it was

observed to combat ten times. Usually the opponent would retreat a short distance as soon as White-head rushed at it; sometimes both flew up in combat; but in every case White-head was successful. In a few days the number of robins on the Jordan Hall east lawn was once more only about a dozen.

So far as known, robins in winter do not roost at night on the Stanford Campus. They fly in large groups each evening southwest toward the Santa Cruz Mountains. On January 27 the writer attempted to locate their roosting place by following the birds by automobile. Of course it was not possible to follow the same group all the way, but after one had passed ahead out of sight another group would pass overhead going in the same direction and so on. The birds were traced as far as Searsville Lake, four miles by air line from Stanford. Darkness prevented following farther, but in all probability they had a typical roost near the top of the mountains.

It was not possible to be absolutely sure that White-head flew off the campus with the other robins, since each evening it would fly up with a group to a thick The birds would perch there two or three minutes and then fly off. Whitehead could not be distinguished from other robins when flying at a distance, so it was thought just possible that it formed an exception and remained behind in the thick tree. The writer hesitated to believe that it took a four-mile flight every morning and evening and came back to the same spot. However, more light was shed on this point by the writer's fortunate discovery of a second part-albino robin which was seen near the Stanford Basketball Pavilion. This robin had the tail entirely white and in addition had white feathers in the wings. It was even more conspicuous than the other bird. White-tail was seen at the same place for seven days from February 12 to February 18. How long it may have been there before is not known. White-tail's territory was the small lawn and adjacent bushes at the west end of the Basketball Pavilion, an area of about 300 square yards. observed there at various times from before sunrise to half an hour after sunset. Only one other robin shared the west lawn with it, feeding in the south corner and more often being across the road on the south lawn where about eight other robins were usually to be found. Only once was White-tail observed on the other lawn. This was when the writer frightened it up a tree. It stayed there a minute and a half and then flew down to the south lawn. At once another robin rushed at it and without staying to fight it went back to its own lawn.

As so few robins were nearby it was possible to watch definitely White-tail's individual flight in the evening. This was done twice. The first time White-tail flew to the top of a tree about half an hour after sunset, then to a wire and then flew off until it disappeared from view even with six-power field glasses. The second evening the same thing happened except that three other robins from the nearby lawn flew with it. In each case it flew high in the direction of Searsville Lake until out of sight. In both cases it was observed back on the pavilion lawn the following morning.

White-tail was last seen on February 18. The next day two other robins were in its place on the west lawn. Thus it seems that the presence of White-tail had kept the other robins away before, since they at once took over the territory.

The question at once arises, does each individual robin in winter have its own territory, feeding there day after day and flying several miles to roost each night, and perhaps changing its territory from time to time during the season upon depletion of the food supply in an area? This seemed unlikely on the face of it as robins are irregular in their occurrence, some years being much more numerous than others. Besides, other flocking birds such as the California Quail and Puget Sound White-

crowned Sparrow have other habits. The flock as a whole has a territory but the members of the flock mix up indiscriminately feeding in all parts of it (Price, Condor, XXXIII, 1931, pp. 3-7, 238-242). Only extensive marking experiments can settle this problem, and as before stated the writer has not been able to trap robins at Stanford. However, it does seem improbable that in the case of two robins (each apparently differing from normal birds only in appearance) both should be abnormal in flocking behavior.

SUMMARY: Two semi-albino robins were observed during the winter season at Stanford University, California. One was observed daily on the same lawn from January 19 to February 18 with the exception of three days. The other was observed on another lawn from February 12 to February 18. Each night they flew away (in all probability four or five miles) to roost and returned to the same small areas before sunrise the next day. This suggests that each individual robin in a flock may have its own individual territory during the winter season.

Stanford University, California, September 19, 1932.