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## BREEDING RANGE OF THE YOLLA BOLLY FOX SPARROW

WITH FIVE ILLUSTRATIONS

By HAROLD W. CLARK

On June 2, 1931, while my daughter Melva and I were ascending the southwestern slopes of Snow Mountain in Lake County, California, we were most pleasantly startled by the clear, ringing song of the Yolla Bolly Fox Sparrow (*Passerella iliaca brevicauda*). As seen from its lower slopes, Snow Mountain appears to be a rather high peak rising abruptly from the low levels, with watersheds of the Eel River on the west and the Sacramento River on the east. Only when one reaches the 6000-foot line does he realize that the top is a broad plateau (see fig. 14) partly timbered with white fir (*Abies concolor*), red fir (*Abies magnifica*), and Jeffrey pine (*Pinus ponderosa jeffreyi*), and that the rather open formation of most of the forest allows an excellent development of snowbrush (*Ceanothus cordulatus*) and wild cherry (*Prunus emarginata*). In this habitat (fig. 15) the Yolla Bolly Fox Sparrow proved to be actively present all over the mountain top, except for those barren areas nearer to the summits of the two peaks, Snow West and Snow East. In all, however, there are somewhere in the neighborhood of eight square miles of territory that offer excellent breeding conditions for Fox Sparrows.

That this territory on the top of Snow Mountain marks the most southern breeding range of the Yolla Bolly Fox Sparrow seems evident. Mr. Joseph Mailliard (Proc. Calif. Acad. Sci., Fourth Series, ix, 1919, pp. 288 ff) speaks of locating breeding grounds of Fox Sparrows on Sanhedrin, which is slightly farther north than Snow Mountain, but not on Goat Mountain, which is the next peak south of Snow Mountain. The reasons for this appear to be clear, however, from our observations on Snow Mountain; for Goat Mountain is not high enough to develop a sufficiently large area of the characteristic fir and snowbrush in which the Fox Sparrow seems to prefer to nest. But the plateau on top of Snow Mountain furnishes almost ideal conditions for their life. It is quite plainly an island of the Canadian life-zone sufficiently extensive to allow fairly typical Canadian species to hold their own there.

In studying the relations between this Canadian island and the high ridges farther north in the vicinity of the Yolla Bollies, I made two trips across the range, one on June 11 from the vicinity of Covelo by way of Mendocino Pass to the region around Black Butte, the other on November 8 from Eureka to Red Bluff by way of the highway crossing the range just north of North Yolla Bolly Mountain. Observations



Fig. 14. LOWER EDGE OF PLATEAU ON SNOW MOUNTAIN. Off to the left the mountain drops away steeply into the yellow pine Transition and chaparral. In the picture, taken at 6,000 feet, Jeffrey pines mingle with young red firs, and several species of manzanita come up from below to meet the cherry and snowbrush of the Canadian life-zone. On the distant hill *Quercus vaccinifolia* grows in abundance. The locality here pictured was where we first heard the Fox Sparrow singing.



Fig. 15. SOLID STANDS OF SNOWBRUSH AT PLASKETT MEADOWS (6000 FEET). AT THE LOWER BORDER OF THE CANADIAN, ON THE EAST SIDE OF BLACK BUTTE, WERE DENSE STANDS OF THE SNOWBRUSH, AFFORDING EXCELLENT COVER FOR FOX SPARROWS.

made on these two trips enabled me to map accurately the extent of the Canadian life-zone in this region. The accompanying map shows the area above 5000 feet elevation, where Canadian zone conditions prevail. One would be inclined at first



**Fig. 16. MEADOW COVERED WITH HELLEBORE NEAR BLACK BUTTE (6800 FEET); AT THE SUMMIT OF THE INNER COAST RANGE.**



**Fig. 17. NEST OF FOX SPARROW ON GROUND IN MEADOW, SHELTERED BY THE HELLEBORE.**

to think that this area is simply a southward extension of the Canadian region from the Salmon-Trinity alps. My opinion, however, based on comparison of the bird life of the Yolla Bolly region and that of the Trinity region (Kellogg, Univ. Calif. Publ. Zool., 12, 1916, pp. 379 ff), is that the Yolla Bolly region is an isolated area with an

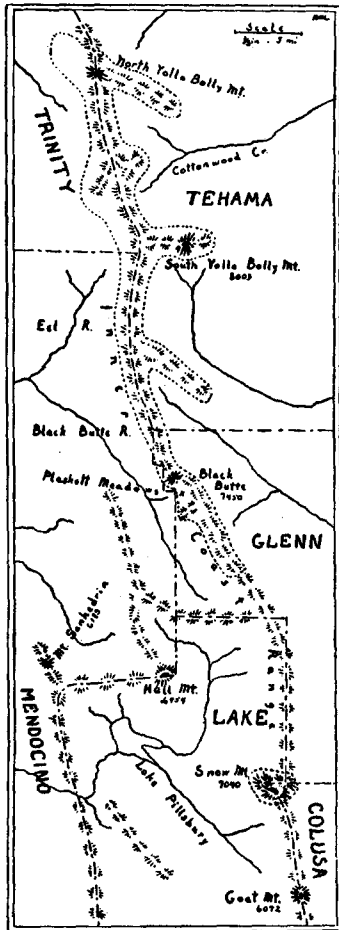


Fig. 18. MAP OF A PORTION OF NORTHERN CALIFORNIA, SHOWING THE SOUTHERN BREEDING RANGE OF THE YOLLA BOLLY FOX SPARROW. THE CANADIAN LIFE-ZONE AREA IN WHICH THIS BIRD WAS FOUND BREEDING IS INDICATED BY THE DOTTED LINES. NOTE THE ISOLATED AREA ON SNOW MOUNTAIN. Drawn by Harold W. Clark from observations taken in 1931.

avian fauna quite distinctly separated from that of the Trinity region. In its floristic features the Yolla Bolly-Inner Coast Range line of mountains possesses many features linking it with the humid coast belt more closely than with the Salmon-Trinity mountains. It would appear that careful studies of the bird life will show the same relationship. Further study will be necessary to fully develop this suggestion.

The west side of the range in this vicinity is swept by strong winds, and the fir forest does not develop until the summit is reached, at 5000 to 6000 feet, unless protected by other ridges near-by to the west. The flats on top of the ridge, the western slopes where protected by other ridges, and the eastern slopes down to 5000 feet are covered with fir forest interspersed with snowbrush, making satisfactory breeding ground for the Yolla Bolly Fox Sparrow. This breeding range and the range of the Canadian forest seem quite generally coterminous.

While camped at Black Butte, and at Plaskett Meadows close by, we found that some of the Fox Sparrows were just building their nests, others were incubating, and some were feeding young. One nest-full of young scattered the very day we observed them. Most of the nests found were in the snowbrush at elevations of from twelve to eighteen inches from the ground. One was located on the ground in the midst of a meadow full of hellebore (fig. 16). The female would alight on an old fence post about three feet from the nest, look around a while and then dive to the nest (fig. 17). It was this act that gave us the location of the nest in the first place.

The birds did not seem to be confined closely to the vicinity of the nests, either for singing or foraging. In the case of the full-grown young, the last day of their stay in the nest the parents were very busy gathering food, and at frequent intervals they came and went over a radius that included a bit of heavy fir timber at least a hundred

feet away. In the case of the nest in the meadow, the male seldom sang from the post near the nest nor from other posts near-by, but was more often heard to give his song from the tops of small firs or even trees as high as fifty feet at a distance of from one hundred to three hundred yards from the nest. When followed up too closely, he would fly across the meadow to another tree and give his song there. This habit of moving about from one singing station to another was quite characteristic of the male birds in this vicinity.

An interesting case of conflict between birds occupying nearly the same ecologic niche was observed at Black Butte. Here I found a number of individuals of the Green-tailed Towhee (*Oberholseria chlorura*), singing from the same places used by the Fox Sparrows. One morning there was quite a spirited battle between a Fox Sparrow and a towhee over the possession of a small red fir. After several sallies at the towhee, the sparrow finally allowed him to remain in the same tree, and the two sat close together in the upper twigs and sang alternately for some minutes.

*Angwin, Napa County, California, February 5, 1932.*