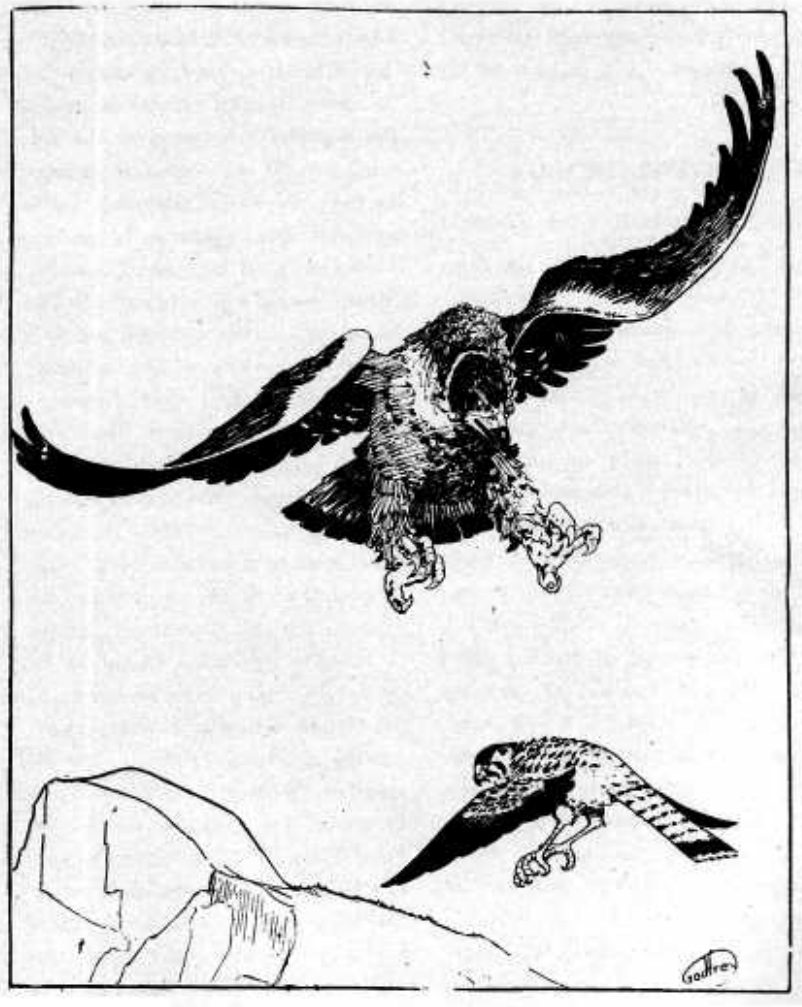
YOSEMITE NATURE NOTES



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Distribution of Wildlife Over Our Western Mts.

By Ranger Naturalist PAUL W. NESBIT

A great deal of work has been done in each of our western national parks to identify the local species of plants and animals. Seemingly little attempt has been made to unify this work, or to study the distribution of the similar forms in the different parks. Very little can be done in this article to cover such a big problem, but some suggestive observations may be made. It has been the writer's fortune to become a ranger-naturalist in Yosemite National Park, after having spent a great deal of time in Rocky Mountain National Park and in the mountains of Colorado. Therefore, a comparison of these areas serves as a basis for this article.

It will be important at the start to call attention to the fact that both of these national parks are in mountainous areas. Both contain high peaks where climatic conditions are like those of the far north in being too extreme for the growth of trees. Both parks extend from these conditions downward thru Hudsonian and Canadian life zones where conditions and life forms are similar to those of the Hudson Bay and Canadian areas. Each park also includes more or less of the transition zone at lower altitudes in which the life forms are intermediate between the northern or boreal conditions, and the southern or austral conditions.

It seems to a casual observer that the higher one goes in these areas, the greater are the similarities. This impression is enhanced by the glow that results from meeting old friends of the other area among the plants and animals. Perhaps because there are fewer species at higher altitudes, it makes the forms common to both areas that much more conspicuous.

Perhaps the seeming similarity of forms is due to general appear-

ances other than to the actual number of identical species. Higher areas with bare or lichen covered rocks, and low-lying plants carpeting the patches of soil, would in a superficial way give the same general aspect, even if few or none of the species were identical.

In order to have an actual basis upon which to pass judgment, one would have to make a comprehensive study of identical species and their altitudinal ranges. A brief survey shows five trees and about forty bird species to be common residents of both national parks. Among these are many of the conspicuous and common forms. The mammals of the two regions are closely related but not identical. Niches in the wildlife communities which are filled in one area by a certain form, will have a quite similar form in the other area. Conies, ground squirrels, porcupines, coyotes and pine martens might be cited as examples. Several species of boreal or northern plants are common to the two regions. Other forms filling similar niches are closely related.

It is natural to wonder why there are so many identical or similar forms occupying areas so widely

"Climb the mountains and get their good tidings". - Muir

separated by lowlands and deserts which would tend to act as barriers to check their distribution. Of course the fact that these species are occupying areas of similar climatic conditions is important. But even so, we must find a means for the species to have become distributed to the areas in the past. The advance and retreat of the glaciers form the basis for one means of explanation. This tended to bring boreal forms of life to more southern latitudes because of the accompanying extreme climatic conditions. Then as the glaciers retreated, these forms found in the mountains the conditions to which they were suited. Thus the Cascade and Sierra Nevada Mountains in the west, and the Rocky Mountains farther east, tend to be long climatic peninsulas connecting the northland with more southerly regions.

These higher areas tend to comprise what might be termed a horseshoe effect. That is, the shape of the area occupied by boreal forms of life in the western part of our country is roughly that of a horseshoe. The mountain ranges referred to make the sides of the shoe and converge somewhat at the north where the connection between the two is made, while the opening remains at the south. This horesshoe effect is also related to the distribution of our major western national parks which are scattered along the shoe from Sequoia, though Rainier and Glacier to Rocky Mountain National Park. It might even be considered to extend southwestward to include the Grand Canyon National Park.

The distribution of boreal life forms must be considered to have extended from the north for greater or lesser distances along either side of the shoe. Some species have probably found more suitable conditions in one branch than in the other and thus have become farther extended and more common on one side than the other. Thus the Alpine Fir (Abies lasiocarpa (Hooker) Nuttall) extends at high altitudes throughout the Rocky Mountain region, but only as far south as Oregon to the west. The Whitebark Pine ((Pinus albicaulis Engelmann) extends at high altitudes on the west to the southern parts of the Sierra Nevada Mountains, but only into Wyoming on the east.

Another tendency is for variations to occur between the forms on the different sides of the horseshoe. Thus there are recognized differences between the Western Yellow Pine (Pinus ponderosa Lawson) at the extremes of its range. In the west it characteristically has three needles in a bundle, but in the Rockies it may have either two or three needles in a bundle. In a similar way the Lodgepole Pine (P. contorta Loudon) in the Rockies has cones that are much more persistent than those in the west. It

may be possible that the comparatively recent advance and retreat of the glaciers has resulted in a more general distribution of northern forms than has occurred by other factors working on the southern forms.

The development and further verification of some such general principles may help naturalists and visitors in any of the major western national parks to understand that area better in relation to the whole. Interesting similarities and differences could then be better understood by those traveling from park to park. And perhaps more important would be the development of a deeper understanding of wild life distribution and the many factors involved.

WIDOW KILLS A WIDOW

(By HAZEL M. BAILEY, Museum Staff)

Many articles have been written on the Black Widow Spider (Lactrodectus mactans), the most complete being by Herms, Bailey and McIvor, "The Black Widow Spider," Agricultural Experiment Station, Bulletin 591, University of California. We know in detail their life history, their food habits, and their venomous qualities. We know that the female very often kills her mate, but it was a surprise to us at the Yosmite Museum to know one female would kill another female.

Mr. William Ruebenack collected on April 10, on a warm outside wall of the Yosemite Lodge kitchen, an adult female of this species, presenting it to the museum. This, coupled with other spring observances, establishes the fact that Lactrodectus is able to winter at this altitude. It was sent to the school where children and teachers fed and observed it until May 26, when it was returned to the museum and placed in a fruit jar with another Black Widow female which had been collected a few days previously and had killed a number of wasps and flys we supplied. They got along very peacefully for two days. Then all of a sudden the newcomer to the jar, which was larger than the other, made a dash at the one who had already made a web for herself, and the fight was on. After the first attack they went to opposite sides of the jar in preparation for the fight which ensued. It wasn't long before the hometowner had the other in her clutches, apparently injecting some of her poisonous fluid, for she wilted almost immediately. Then she wound her web round and round her for about an hour.

The entombed lady, white-shrouded in fine silk, was reduced in a few minutes to approximately one-fourth her original size.

A New Nesting Record for Yosemite Valley

Ranger-Naturalist ENID MICHAEL

In Yosemite Valley during the last sixteen years birds have been kept under rather close observation. We have watched for their arrival in spring and for their departure in fall. We have seen the few winter visitants come and go. And during those sixteen years many a thrill we got when we happened to meet some erratic wanderer that had dropped into the Valley for a short stay. One of the big thrills was when a little band of Bohemian Waxwings spent a few days in the

apple orchard. Another time it was a Western Mockingbird that gave us a thrill. A Mockingbird may not sound very thrilling, it is so common in many sections of the State, but this was the first time a "Mocker" had ever been seen in Yosemite Valley. The bird was a pioneer, and there is always something thrilling about pioneers. And by the way, there is much evidence to indicate that it is always young birds that do the pioneering. Old birds come back to their old nesting grounds—birds that have not nested before must seek new nesting grounds for they are not allowed to crowd their parents. I have only mentioned two of the erratic wanderers; if I were to check over the records of the last sixteen years I would probably find as many as fifty species of birds that might well be classed among the erratic wanderers.

Last year it was the Mountain Bluebird (Sialia currucoides) that established a new record by nesting on the floor of Yosemite Valley. This year it is a pair of Western Bluebirds (Sialia mexicana occidentalis) that are pioneering. Also the Mountain Bluebirds are back at their site of last year. This, in a way, is a strange situation for it is the habit of Mountain Bluebirds to nest at much higher elevations —at the border of some mountain meadow at 8,000 or 10,000 feet. This year we find in the Yosemite Valley the two species on common nesting grounds, in the same meadow and not 200 yards apart.

The western Bluebirds are nesting in a deserted hole of a Hairy Woodpecker in a willow tree about ten feet above the ground. The

home tree is less than 100 feet from the Merced River. The Mountain Bluebird's nest also in an old woodpecker hole at the lower end of the meadow and not far from the river. On June 11 the parents of both species were bringing in food to the young.

It is not an uncommon occurrence to have the two species of Bluebird in the Valley at the same time, once during fall and again in early spring. The Western Bluebirds are winter visitants to the Valley, they come in in October when the first mistletoe berries are beginning to ripen. All winter long they feast on these berries. During October Mountain Bluebirds pass through Yosemite Valley on their way out of the mountains and if the weather is fair they may linger about the Valley for a month or so. The two species of Bluebirds meet again in early spring, the mountain birds are on their way back to the mountains and the Western Bluebirds still remain in the Valley to clean up the last of the mistletoe crop.

While the two forms of Bluebirds meet in Yosemite there is not much competition between them along the forage lanes. The Western Bluebirds spend most of their time eating mistletoe berries while the Mountain Bluebirds hawk over the meadows for insects. However, in the spring flocks there is a mingling of both species. According to the records it was during the spring of 1925, in early May, that we had the pleasure of watching a mixed flock of bluebirds. And well I remember that we made the most of it, we wandered with the birds for several miles. The birds were feeding as they moved along and often an individual would perch on a dry stalk that stood above the meadow grass. The two species are easily separated. The Western bird is a deep purple blue and there is a rich cerulean practically all over. The tails and wings of the females flash the different shades of blue.

A MOUNTAIN LION KILL

M. D. BRYANT, Ranger-Naturalist

Many false impressions and statements about our wild animals arise as the result of hasty or misinterpreted observations in the field. I offer the following as a case in point.

Late in the afternoon of July 26, 1935, while hiking toward Fletcher Lake on the Babcock trail, I had reached a point about two miles north of the lake when a strong odor of putrefying flesh came to my attention. After a short search I discovered that the odor came from the carcass of a large buck mule deer. The body was well hidden beneath a lodgepole pine that had fallen across a boulder. A scraped area showed that the deer had been

killed some fifteen feet away and had been dragged to its secluded location by some large animal. The buck was in velvet and had three prongs to the antler on the left side and four prongs on the right. The belly had been torn open and a portion of the internal organs were devoured. A few large claw marks could be seen in the skin at the sides of the wound. There was no evidence of injury to either the head or the neck nor had any of the flesh been eaten. No other marks that might have led to the death of the deer were found.

Numerous bear tracks and some bear dung containing deer hair were found in the vicinity. A few mountain lion tracks were seen in the soft soil nearby. Since the way in which the animal was killed is typical of the mountain lion, it is only reasonable to assume that one of these animals killed the deer and that the bear, scavenger that we know him to be, came upon the kill after the lion had finished the meal.

I passed the site of the kill in early July of the following year and examined the spot to determine what changes had taken place. To my surprise I found that the body of the deer, including the skeleton, had almost completely disappeared, only a bit of the skin and a small portion of the intestine remaining. In view of the above one might have falsely assumed that a bear had killed and partially devoured the deer. The fact that the bear and perhaps the coyote had done away with the remains of the carcass is another proof of their value as scavengers. The mountain lion, by keeping the deer population within the limits of the grazing capacity of the range and by eliminating the weaker individuals, is serving in a useful way that fully justifies the protection that is given it in our national parks.

How Fast Does a Loon Swim Under Water?

By C. A. HARWELL Park Naturalist

This note is to record the first observation of a Pacific Loon (Gavia pacifica) in Yosemite National Park and to describe the behavior of the bird in the clear water of the Merced River.

December 6, 1929, Mr. and Mrs. Ray Driver of Central Point, Oregon, noted a loon in the pool formed by the power house dam just below the Pohono Bridge. Water was low and the bird so plainly observable while diving that they secured some very good movies of it under water. December 8, Mr. Fred Kinnard, an ornithologist of Boston, and I accompanied the Drivers to observe the loon. We found it had moved up-stream several hundred yards to a pool some sixty feet long and thirty feet wide. At our least move it would submerge, bringing both feet up near the bill and plunging down with a splash which gave its presence away. Its emergence from water was noiseless. Its swimming under water was by alternate strokes of feet, wide spread. Never did it use its wings. On December 9, I watched the loon for half an hour. The first rain for months had fallen during the night and the river was higher and water slightly muddy so that it could more easily dodge me by diving. Its longest time under water was its first dive after my arrival, one minute, fifteen seconds.

December 10, the loon was in a pool some three hundred feet long so I decided to time its rate of swimming under water. The technique was simple. A level highway was at the very edge of the pool and the view unobstructed. A wave of my arm and the loon would instantly submerge and head in a direct line through the very center of the pool for the opposite end. I found I could walk faster than it could travel. So I clicked its time of submergence, started opposite the center of the wave ring set up by the bird's dive, and counted my paces to the expected point of emergence at the far end of the pool, where I stood quiet, noting time of loon's emergence. Another wave of the arm, correction of distance, and we were off for another timed dive.

I measured and timed fourteen dives. There was no perceptible current and no noticeable difference in speed up or down the pool.

Distance	Time	Speed in Ft. Per Min.
100 feet	40 seconds	150 feet
120 feet	52 seconds	153 feet
120 feet	52 seconds	153 feet
100 feet	42 seconds	143 feet
291 feet	70 seconds	249 feet
282 feet	63 seconds	180 feet
189 feet	58 seconds	196 feet
210 feet	59 seconds	214 feet
264 feet	72 seconds	220 feet
93 feet	40 seconds	206 feet
228 feet	50 seconds	274 feet
240 feet	68 seconds	212 feet
246 feet	57 seconds	259 feet
231 feet	64 seconds	217 feet
Av. 194 ft.	56 seconds	200 feet

The loon during its fastest dive traveled 3.1 miles per hour, which is a good walking speed for a man.

December 11, I searched up and down the river but could find no loon. A brisk up-canyon wind that morning had evidently given the bird the opportunity it had been waiting for these six days and it had been able to take off and head for the ocean.