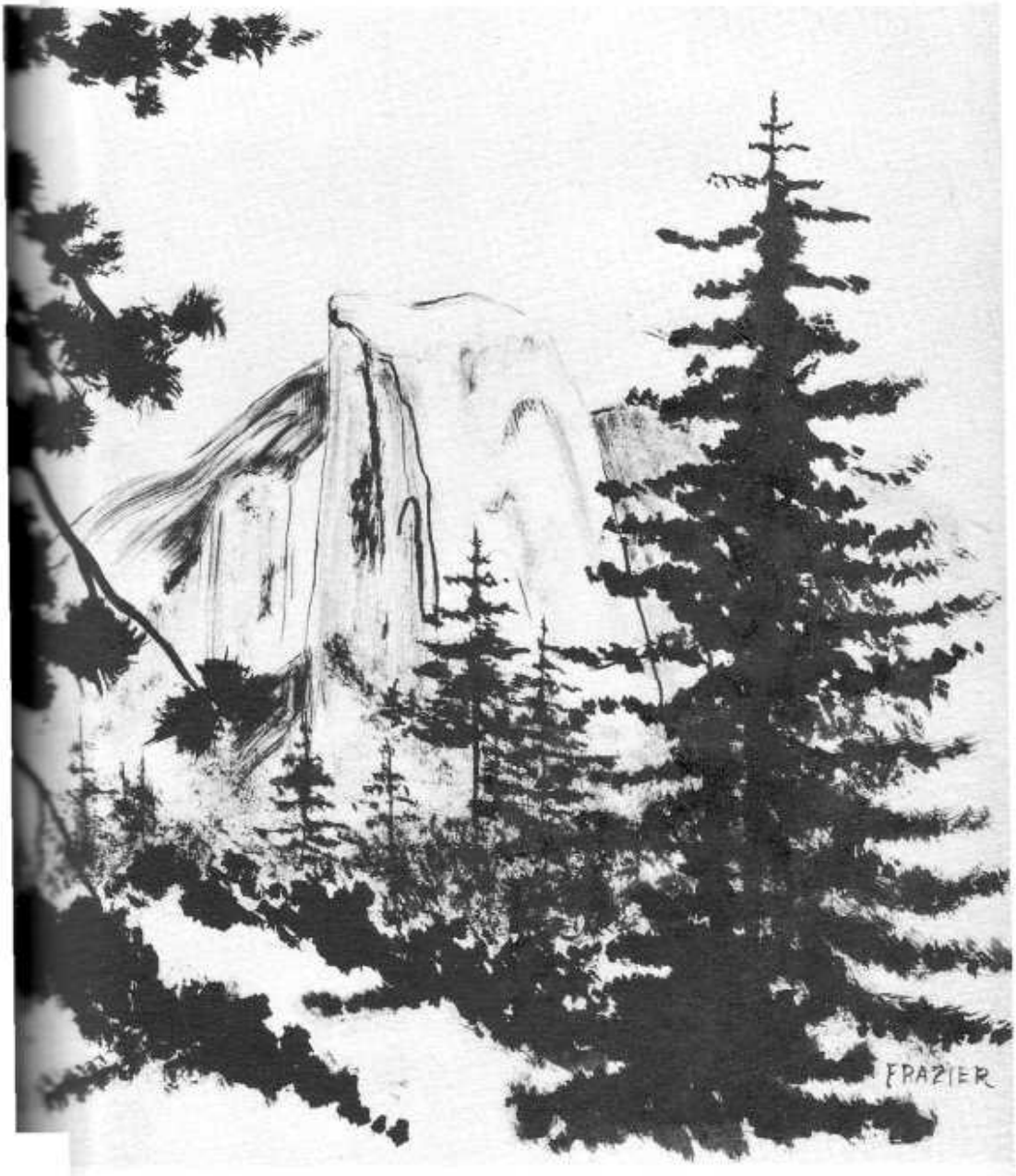
YOSEMITE

VOLUME XXXVIII - NUMBER 1 JANUARY 1959



In cooperation with the National Park Service.

OUT OF YOSEMITE'S PAST

A One Picture Story

—*Yosemite Museum*

First Sergeant Joseph Fernandez, Troop K, 4th Cavalry, for whom Fernandez Pass was named, participated in the exploration of the headwaters of the Merced River, 1895-1897. Few people realize the important role played by the U. S. Army in the early administration of the National Parks. This story, as it pertains to Yosemite, will be told in the Wawona Pioneer Village.

yosemite
NATURE NOTES

Since 1922, the monthly publication of the National Park Service and the Yosemite Natural History Association in Yosemite National Park.

John C. Preston, Park Superintendent
Douglass H. Hubbard, Park Naturalist
Robert F. Upton, Associate Park Naturalist
Paul F. McCrary, Assistant Park Naturalist
Sigismund J. Zachwieja, Junior Park Naturalist
Robert A. Grom, Park Naturalist Trainee

VOLUME XXXVIII *JANUARY 1959* *NO. 1*

DWARFS OF THE PLANT WORLD

By Ralph Frazier, Ranger-Naturalist

Illustrated by Doris Frazier

Visitors to Yosemite National Park are amazed, and rightly so, at the extent and variety of plant species around them gigantic in size. The world famed *Sequoia gigantea* commands exclamations of wonder. Other large, imposing trees seem to be natural adjuncts to the surrounding in which thety are found. Quite often smaller plants go completely unnoticed. The person who ignores such a small tree as the chinquapin *(Castanopsis sempervirons)* ignores one of nature's more interesting experiments. When one examines the leaves of the chinquapin, he finds them to be dark green and smooth above and woolly beneath. This in itself is not especially interesting but the fact that the leaf appearance is definitely live oak in its main aspects is strange. Why? Because the nuts produced by the small tree are enclosed in burrs covered by prickles. A person familiar with the American chestnut *(Castanea dentata)* would identify the burr as one coming from that plant. Did nature's plan go awry? Should the chinquapin have become an oak or a chestnut? Or did nature find that a plant which had characteristics of both would fill a biological niche which neither could fill by itself?

Before presenting another example of dwarf trees of the area, I feel that I should attempt an explanation of the causes contributing to dwarfism. A plant produces food for growth when two conditions exist. Minerals and water have to be transported to the leaves and green coloring matter must be present to manufacture food in the presence of sunlight. The chaparral plants of the Southern California foothills are able to produce food for growth only about 30 days out of the year and consequently the trees are dwarfed. The next question would be — what would cause

Manzanita.

dwarfism in the mountains where there is plenty of rainfall? We must remember that rain does not fall equally well on each portion of the slope from the central valley to the highest peaks. There is an intermediate zone of great snow buildup along with little moisture in the foothills and also on the bare granite of the higher elevations. It is readily understandable that tiny plant forms as found clinging to the granite at higher elevations but why do many dwarf plants exist in zones of good rainfall? Let us take the green leaf Manzanita (*Arctostaphylos manzanita*) as an example. It grows abundantly in the dry chaparral areas and can also be found in dense growth at such a place as Glacier Point where winter snows are deep. In investigating reasons for manzanita growth at Glacier Point we first discover that there is little rain during the summer season. Plants with far extending and deep reaching roots can utilize moisture which penetrates the soil during spring melt and run-off. The red fir forests, the climax forest at this elevation, makes good use of the stored moisture and allows room for the manzanita only on the more barren outcroppings of granite.

The manzanita's diffuse root system takes advantage of every crack and crevice. It gleans minerals and moisture from what would appear to be impossible living situations. Here, then, is our answer to why the manzanita is found in a good rainfall zone. It exists on those portions of an area which are able to retain the moisture which is laid down upon them. A cursory examination of the physical characteristics of the manzanita provide a capsule course in evolutionary adaptations to a harsh environment. One can't help noticing


FRAZIER

that most of the leaves grow vertically. Moisture is thus conserved by reducing evaporation. The smooth, twisted trunk also conserves what little moisture the plant is able to gather. We often find the manzanita in sparse soil completely surrounded by bare granite. It is natural to ask, "What provision has been made for new growth in a different area?" Many animals like manzanita berries for food, and the amazing answer to this question is that nature has provided the bodies of these animals for seed transportation and their intestinal juices for the final step in the preparation of the seeds for germination. If the seeds are dropped to the ground at the base of the plant, they will not germinate. Chemical changes in portions of the seed take place in the animal's stomachs. This helps prepare them for germination when they are dropped at a later time and in a different place.

I have but scratched the surface in telling of our interest-packed dwarf trees. Follow me in a later article and I will lead you down a woodland path to discover and examine dwarf trees which bear flowers once used for soap and dwarf trees which grow from roots which burn like fat.

THE JUMPING MOUSE OF LYELL FORK

By Lorraine Miles, Ranger-Naturalist

In awe of the majesty of Lyell Canyon, forty hikers were trekking to Upper Lyell Base Camp. Near Ireland Creek, where hemlock, lodgepole, and whorled pentstamon blend stature and beauty by the trailside, a small russet-brown animal jumped in alarm at the army of feet bearing down upon it. The meadows of this valley were wet with the waters of Maclure's and Lyell's melting snow fields. Small tributaries from Kuna Crest, Potter Point, Ireland Lake, and Parson Peak had made a marsh along sections of the trail.

The western jumping mouse was in his element. His hind feet were large and long. His repeated hopping covered nine to twelve inches easily. Heading first for the water then reversing himself towards the hillside, his coloration and markings were easily seen. The hair on his sides was russet tinged with yellow. The back hairs were brown and the belly, very light, almost white. The mouse was no more than three and one half inches long. The tail was about one and one half times longer than his body, with a few white hairs at the tip.

This interesting mouse is similar to the meadow jumping mouse which is smaller and not found in the mountains. The woodland jumping mouse of the East has a long, white-tipped tail.

The Western jumping mouse (*Zapus pacificus alleni*) is nocturnal. Globular nests of dried grass are constructed on the surface of the ground in tall grass. Large layers of fat are accumulated in late summer prior to retreating to their ground burrows for hibernation. Some have been observed estivating.

Distraught but unharmed, the jumping mouse of Lyell Fork found sanctuary under a fallen lodgepole surrounded by colorful yellow monkey flowers, and forty hikers continued upward to Lyell, searching for the first glimpse of this highest of Yosemite's peaks.

SOME IMPRESSIONS OF A MOUNT LYELL CLIMB

By Lloyd Brubaker, Ranger-Naturalist

—*Anderson, NPS*

Sun cups on Mt. Lyell glacier.

A thrill of anticipation when the peak is first sighted in the early morning light.

The smell of bacon and eggs on the cool sharp air.

An uncomfortable first half mile while the breakfast settles in the stomach and the stiffness of the night works away.

A dry mouth as cold-dry air is sucked in as the trail gets steeper.

The first crunch of snow underfoot.

An eye-searing glare from the sunlit snow slopes.

Sun cups affording ankle-twisting steps up the glacier.

Companions becoming quiet with exertion up the steepening slope.

Relief on finding the *bergschrund* filled and solid with snow.

The careful steps along a traverse to reach the rocky chute leading to the top.

Ballet-like jump-and-balance on the boulders near the summit.

The world suddenly opening out beneath in a crescendo of peaks, lakes and canyons.

Minutes of awed contemplation of the view below.

Excited discussion identifying the peaks and lakes.
Returning vigor as lunch takes hold.
Wobbling knees as we descend, jumping from boulder to boulder.
A cold, wet, but joyous slide down the glacier, jarring from sun cup to sun cup.
The laughter and shouts echoing from nearby Mt. Maclure.
The younger folks linking together toboggan - wise and swooping down like a frolicking centipede.
The excited conversation on the trek back to camp.
Telling and retelling the new and fresh experiences.
Songs, stories and fond glances at the darkened mountain from the warm campfire

—*Anderson, NPS*

Near the summit of Mt. Lyell with Mt. Maclure in the background. Beautiful but dangerous country! A member of this hiking party fell shortly after this photo was taken and sustained serious injuries.

BABE OUT OF THE WOODS

By Charles Vollmer, Ranger-Naturalist

It isn't every day that you can find a newborn babe separated from its mother. This one was still wet and wobbly legged — born that very morning.

About nine o'clock in the morning of July 16, we rounded a curve some three miles from the park boundary on Route 41 to Fresno. On the roadway was a fawn. We estimated that it had been born two to three hours earlier. It was still wet. Its wobbly legs collapsed every other step. The most prominent feature of its anatomy were its ears — the reason for its name — the California mule deer. Our car squealed to a stop. The fawn was completely without fear. It approached us as soon as we alighted from our car, wagging its short tail. Why was he here, where was the mother, and how could we prevent his destruction on this busy highway? These were questions that raced through our heads. While my wife took pictures, I began a search for the mother. The downhill side looked the most promising. A quick search revealed nothing that gave evidence of her presence. Why had she deserted her fawn?

—Anderson, NPS

The protective coloration of white spots is lost in 10 to 12 weeks.

By the time I had returned other cars had stopped. Cameras were clicking and whirring. Well-meaning motorists were petting the helpless little fellow. It was looking for something warm and found a substitute in my car's tires. It licked them, apparently expecting to find some of that warm liquid all mammals get started on during their early life. I have seen other new fawns but they were fearful of humans. They had received parental instruction to lie low and not move. This little fellow had no fear of humans. What had happened to prevent his learning his first lesson? Or had he received one?

As with human babies, the fawn does not feed immediately after birth. The mother will normally hide it while she goes off to feed and recuperate. There is no scent to a newborn fawn. Thus if it remains hidden, it is not likely to be found by predators. Visitors to the park should be reminded not to touch fawns. So doing will give it a scent that might give it away to enemies. But what is worse, the mother may not take it back. This was the problem up on the roadway.

Visitors had gathered in quantity. Traffic was not a hazard to the fawn. He insisted in going from tire to tire. One motorist went for some milk.

Nice pets when young, but dangerous when grown! Raising young deer in this manner leads to never-ending problems!

—Russell, NPS

—NPS

By feeding candy, cookies, crackers, or other human foods which are foreign to the digestive systems of deer, unthinking people contribute to the early death of this doe. Is a photo worth it?

This was refused. The fawn had plainly not fed yet, and his instinct was for the warm milk from his mother's glands. We asked a passing motorist to contact the ranger at the Forest Service ranger station several miles down the road. The fawn continued to wander onto the road. In desperation we carried it to the road edge and there we kept it until the ranger arrived.

Francis E. Sheldon, U. S. Forest Service Fire Control Aide, and a deputy game warden for the State of California, took the young orphan into custody. Mr. Sheldon had an interesting story to tell of another adopted fawn. He and his wife had raised a female fawn. They called her "Nosey." She wouldn't go away after she had been weaned, so they tied a bell around her neck.

Nosey grew up and had twin fawns. Long after these fawns had been raised and had left for the woods, Nosey turned on her benefactors. She struck out at the Sheldon child with her sharp forefeet, just missing her face, but striking her in the chest. This was the time to return her to the wild state.

We continued on to Fresno leaving, but not without sadness, our first-found babe of the woods. It wasn't until 9:30 that night that we learned the outcome of this misadventure of the fawn. Mr. Sheldon had waited until the motorists had gone. Then he made another attempt to locate the mother. Going to the spot along the road where we had first seen the fawn, he descended the bank. After some investigation he located the place of birth. A snort in the thick chaparral gave evidence of a deer in the immediate vicinity. The fawn responded to its natural instincts and behavior by freezing to the ground. Mr. Sheldon backed away and listened. The doe was communicating with her fawn. It was a signal to come. Here was a case of a fawn with the human scent strong on its body being taken back by its mother. Thus our babe out of the woods was returned safely to its natural habitat.

PROTECTIVE INSTINCT

By Vick Williams, Museum Assistant

On the last day of June I was returning from a hike to Tamarack Flat via the old Big Oak Flat Road. My venture had originally been of an historical nature; I wanted to see the sights which dazzled the eyes of many thousands of visitors who came to the park before the "improved" Park roads were in use (as well as to obtain excellent views of Bridalveil Fall and the south wall of the western end of the valley). With my curiosity at least temporarily satisfied I had reached the valley floor at about three o'clock in the afternoon. As I passed near the base of El Capitan on one of the last recognizable portions of the grand old road I mused sentimentally that my adventures for the day would soon be ended.

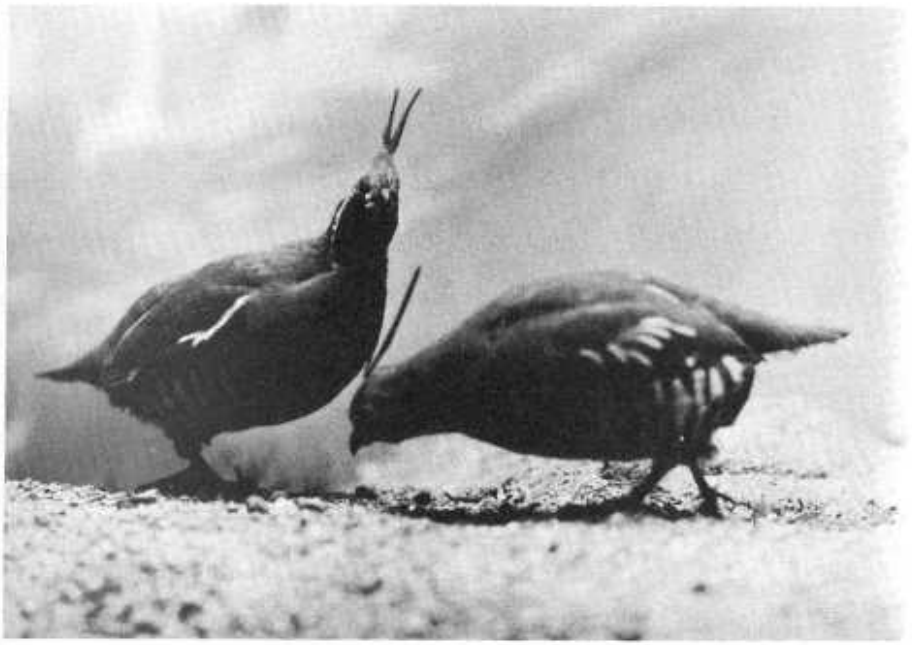
My thoughts could hardly have been farther from the truth, though, because I was rudely awakened from my reverie by a sudden movement in the grass one or two yards beyond the right edge of the pavement. The blur of motion and coincident noise surprised me and I was left momentarily stunned. However, I soon recovered my composure and realized that I had frightened (as well as been frightened by) some sort of bird; I knew not just what. The bird had reluctantly but hurriedly cleared the tall grass with a leap and a few wingbeats, and came to rest incompletely shielded by the lower branches of an incense-cedar about ten yards distant from the place where I stood. My first impulse was to follow the bird's flight in an attempt at identification. Before this was accomplished I recalled reading an Article in *Yosemite Nature Notes* a few days before in which a student of the Yosemite Field School related the finding of a young sandpiper after encountering similar behavior of its parent *(Yosemite Nature Notes* 34:4, 1955). With this possibility, i.e., the discovery of young birds, in mind I momentarily removed my attention from the adult bird which stood eyeing me nervously and repeating short, low, calls. She would stay around if her young were near.

So I began to search the area from which the bird had first moved. For a full minute (it seemed like five) I surveyed the area but was rewarded with nothing more than the sight of thickly-grown ten inch grass and the vicious attack of what seemed like thousands of hungry mosquitoes. During this time the mother bird kept her distance and protection but constantly watched my every move and heckled me with her monotonous calls. Suddenly the still and silent floor of the edge of the small forest came alive with many weak, peeping noises and swift flashes of small dull brown bodies moving through the grass in the general direction of the mother bird. Closer observation yielded little. The tiny birds couldn't have measured over three inches from dull-gray beak to grayish-brown tail. The diminutive, useless wings were brown with bright brown stripes laid on a

dull background, and the small feet were dusky. The movements of the young birds seemed erratic as they scampered in an unpatterned zigzag, evidently led by the calls of the parent. I dared not move for fear of stepping on one of the little creatures. It seemed that I could easily have picked one up in my hands, for they seemed totally unaware of my presence. One little fellow ran between my legs. I counted five chicks but there could easily have been more, their unpredictable movements making a count difficult.

As my attention returned to the parent birds, I recognized the long, straight, black plume of the mountain quail *(Oreortyx picta plumifera)*. Its overall body color was gray, with chestnut on the throat and the sides which also bore stripes of white and black.

As I watched the young birds scurry toward the adult and the procession was hidden by the low shrubs and trees, I realized that I had seen a vital protective device of nature: instinct. These birds had not learned to crouch motionless on hearing the parent's alarm signal. The parent had not used the ruse of fleeing, just out of reach of the intruder, to draw him away from the young birds. This is instinct, another way in which nature protects certain creatures. What made the little fellows leave their well-concealed hiding place? Perhaps the parent changed the time, sequence, or pitch of her call; perhaps I approached one chick too closely and fear overcame the instinct to hide, the movement causing the rest of the flock to break from cover. I do not know. I only know that this interesting experience increased my faith in Nature's ability to protect her creatures.



—*McCrary, NPS*

Mountain Quail.

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