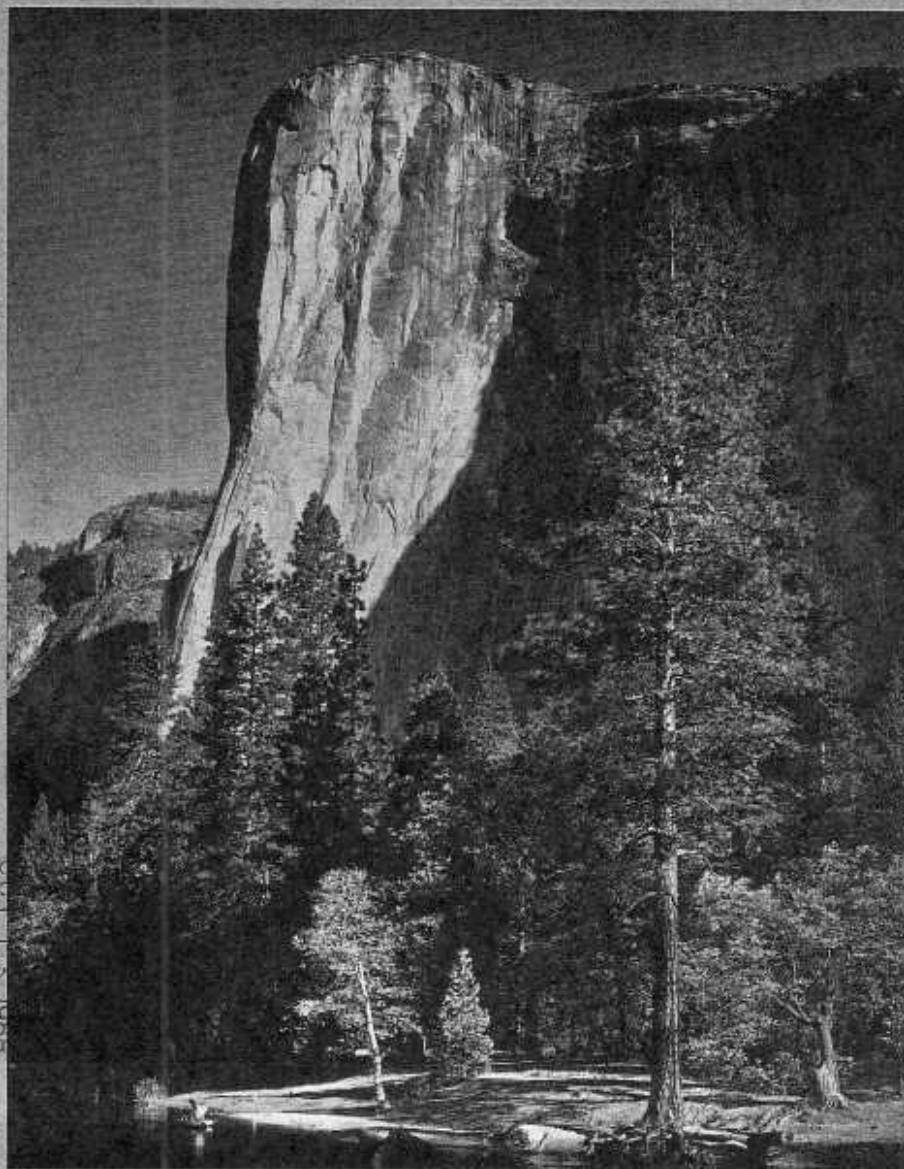


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Indian Canyon, Yosemite Valley

Photo by N. B. Herkenham

Cover Photo: El Capitan, Yosemite Valley. By Ansel Adams from "Yosemite and the Sierra Nevada," text by John Muir, 64 photographs by Ansel Adams. Reproduction by kind permission of Houghton Mifflin Company.

Yosemite Nature Notes

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THE YOSEMITE NATURALIST DIVISION AND
THE YOSEMITE NATURAL HISTORY ASSOCIATION, INC.

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NO. 8

INDIAN CANYON, TRAILWAY OF THE PAST AND FUTURE

By Richard G. Lillard, Ranger Naturalist

When I started up Indian Canyon on July 16, 1950, I knew that I was to be neither an explorer of the primeval nor a brave hiker undertaking the daring and unusual.

I had learned in the Museum library¹ that for the aborigines Indian Canyon was the ancient route northward out of Yosemite Valley. Their name for the canyon was Lehamite—"the place where the arrow-wood grows." When the punitive John Boling expedition approached the Valley in May 1851, most of the Indians, including Maria Lebrado, left the Valley by way of Lehamite, hurrying over boulders with the aid of branches lashed end to end to make a kind of cableway. In 1853 a hostile Mono band made its descent here to attack the Yosemite tribe.

On June 20, 1863, two members of the Geological Survey of California—William Brewer and Charles Hoffmann—had "a terribly hard climb" lasting six hours as they used Indian Canyon for a route to the top of Yosemite Falls, where they got their bearings for a map of the Valley. In *The Yosemite Guide-Book* of 1870 the Geological Survey gave Indian Canyon as the route—a hard one-day's trip—to the top of the Falls.

John Muir early made the canyon one of the hikes he recommended. Up Indian Canyon to Yosemite Falls, Yosemite Creek, and Mount Hoffmann, and back by Fall Canyon "was one of my Sabbath walk, run-and-slide excursions long ago before any trail had been made on the north side of the Valley." In October 1872 he led William Keith and three other painters up Indian Canyon en route to the Lyell Fork of the Tuolumne. They returned from Tuolumne Meadows in two days, again using the canyon. The following March Muir wrote in a journal that Sunnyside Bench "has an easy way out of the valley and up to the higher forests, by way of Indian Canyon." In the winter of 1873 the canyon was choked with avalanche snow. During a raging snowstorm Muir took four hours to make the ascent—for the view.

In 1874, according to Carl Russell—Hutchings gives 1870 as the date—James Hutchings met the cost of a horse trail up the canyon. By 1877 it was reported to be in disrepair, but for a few years hikers made use of it. When J. Smeaton Chase went up in 1912 he found no trail. The canyon was "narrow, gloomy, and difficult." In recent years Sierra Club

1. Brewer, W. H., 1830, *Up and Down California in 1860-1864*; Chas. J. Smeaton, 1912, *Yosemite Trails*; Hutchings, J. M., 1886, *In the Heart of the Sierras*; Muir, John, 1916, *The Mountains of California*, I and II, and 1938, *John of the Mountains*; Russell, C. P., 1928, *A Last Link with the Past*, *Yosemite Nature Notes* 7(6), and 1947, *One Hundred Years in Yosemite*.

member Walter A. Starr, Park Service trail surveyors, ranger naturalists Carl Sharsmith and Harold Perry, Field Schooler Phyllis Lytle, and others have roughed it up the canyon.

With all this in mind I went up the defile to see it for myself and to appraise it as a potential trailway.

No water was running on the alluvial fan of Indian Creek near the hospital. A few yards up I came on a shovel, tin cans, a toy rubber automobile, and other Caucasian debris. Below the horse trail bridge the creek was a trickle and above it the creek was full. I advanced up the boulder-strewn, braided watercourse of lower Indian Creek. Up alongside the present stream were the pools and terraces and rock ramparts of ancient thaws and rainstorms like the modern cloudbursts of 1871 and 1937. I came on a forgotten swimming pool with a crude diving board. Farther up, above the last faded Hershey bar wrapper, I reached huge talus chunks that had tumbled down from the eastern wall. The creek came out from under the talus, and here were one-inch, three-inch, and six-inch iron pipes, rusting footnotes to the history of waterworks in Yosemite Valley.

For a quarter of a mile I scrambled over deep talus that insulated off both sight and sound of a now subterranean creek. I reached splashing water again in pools landscaped by squaw currant² and bush beardtongue. High ahead of me to the east slithered down Lehamite Falls (called Little Wrinkle in Hutching's book).

On the west side of the creek I found the canyon live oak that Chase said he believed "would out-oak every oak that grows on California mountain, foothill, or plain,

. . . A kind of octopus in shape, his long grey arms go searching up and down the canon as though he were feeling for a way out. . . ." I estimated the height to be eighty feet. The six vast branches gave the crown a spread of a hundred feet or more up and down the canyon. The live oak had the lobed bole of an ancient tree, and when I stretched a cord around it at breast height I found its gross circumference to be twenty-nine and a half feet. This gave it a maximum diameter of around nine feet, three inches.

Lehamite Creek joined the canyon at a watery arboretum of large flowering dogwoods, Douglas-firs, big-leaf maples, and eight-fingered five-finger ferns with fronds and stalks two feet long.

Where the canyon narrowed I passed hanging gardens of monkey flower, penstemon, collinsia, and larkspur. I found a route among and over rocks by holding on to red-osier, chokecherry, scrubby live oak, currant, or chinquapin. I saw occasional trail ducks but no evidence at all of blazes, axe trimming, rock fills, or other work necessary for a horse trail. I found it hard to believe that horses had ever gone up or down the canyon. After a leisurely two and a half hours I was at the top of the canyon, at around 6800 feet. I had reached red fir, deep duff, snow plants, and mule-ear wyethias with their leaves wilting in the noontime sun. Nowhere had I seen any syringa, which was, presumably, the arrow-wood referred to by the name Lehamite.

I was convinced that a modern trail should be built up Indian Canyon. It would form a loop with the Yosemite Falls Trail, which is sunny and hot where hikers are apt to be

2. Scientific names of plants mentioned in this article are listed at its conclusion.



Common Monkey Flower

in the late morning hours. Hikers could go up Indian Canyon after breakfast in the shade and go down by the other trail in the afternoon shade cast by the buttresses of Eagle Peak.

As Walter Starr had said, eleven years before, there was no better place to build a suitable trail to the north rim, where there had been no new trails or trail improvements in the twentieth century. According to Starr the Indian Canyon trail would be shorter and safer than (1) the Yo-

osemite Falls Trail, which is dangerous for horseback riders, especially where it contours along the ledge beyond Columbia Rock, and (2) the Snow Creek zigzags, dangerous the year around because of rock slides.

I was glad that in 1949 both Carl Russell, Superintendent, and Herbert Maier, Associate Regional Director, had signed the Proposal Form, Project Construction Program,³ for building and oiling the Indian Canyon Trail. It was to be six feet wide and three and a half miles long from the Valley floor to the rim. The trail had been surveyed in 1930. In 1949 the cost of clearing and grading was estimated at \$47,000, bituminous treatment at \$5,100—total cost at \$60,100. Completed, this trail would be invisible to distant viewers as it wound upward under trees and among shrubs. It would not impair landscape values. Instead it would be a new incentive to visitors to get off their rubber tires and into their leather boots. There are no important, famous, official sights on the Canyon route, not even any extraordinary vistas from it. But the trail site is rich in opportunity for small personal discoveries, for the little things that make big memories.

PLANT NAMES

Squaw currant (wax currant), *Ribes cereum*. Bush beardtongue (stubbyflower penstemon), *Penstemon breviflorus*. Canyon live oak, *Quercus chrysolepis*. Flowering dogwood (Pacific dogwood), *Cornus nuttallii*. Douglas fir, *Pseudotsuga taxifolia*. Bigleaf maple, *Acer macrophyllum*. Five-finger fern, *Adiantum pedatum*. Monkey flower, *Mimulus* sp. Penstemon, *Penstemon* sp. Collinsia, *Collinsia* sp. Larkspur, *Delphinium* sp. Red-osier (redosier dogwood), *Cornus stolonifera*. Chokecherry, *Prunus virginiana* var. *demissa*. Chinquapin, *Castanopsis sempervirens*. Red fir, *Abies magnifica*. Snow plant, *Sarcodes saguinea*. Mule-ear wyethia (narrowleaf wyethia), *Wyethia angustifolia*. Syringa (Lewis mockorange), *Philadelphus lewisii*.



3. This, which includes quotation from Mr. Starr, was made available to me by Dr. Russell and Mr. Carleton Smith, Park Engineer.

POORWILLS NEAR MATHER RANGER STATION

By B. C. "Bugs" Cain, Naturalist

Oakland Boy Scout Camp, Mather, California

Having observed bird life rather closely in the Hetch Hetchy area for the past 24 summers, it was a pleasant surprise on the evening of June 27 this year to observe for the first time a dusky poorwill (*Phalaenoptilus nuttalli californicus*) inside the park boundary. The nearest previous observations were several, in past years, about 15 miles below Mather outside the park.

About 8:40 p.m. on June 27 I swerved our large bus on the road from Hetch Hetchy about 1½ miles north of the Mather Ranger Station to avoid hitting a poorwill as it flew up from the roadway. An automobile following struck the bird as it flew out from the roadside. Upon arrival at our camp near Mather about 15 minutes later the bird was found dead on the bumper of the car. To

surprise the scouts who brought it to me, the seemingly weak and tiny beak of the bird was opened to reveal its truly cavernous mouth. All present were further surprised to see wiggling legs of an insect in the dead bird's throat. In a minute or two a large longhorn beetle (family Cerambycidae) had wriggled out and was given its freedom after reprieve from certain death. A dead cutworm moth (family Noctuidae) was also lodged in the bird's throat.

Two nights later another poorwill (or possibly two) was seen at two different points nearby on the Hetch Hetchy road inside the park. Incidentally Pacific nighthawks (*Chordeiles virginianus hesperis*), closely related to poorwills, were regularly seen in this area for many summers, but none has been seen or heard during the past two years.

YOSEMITE'S ALPINE GARDENS — 1950

By Carl W. Sharsmith, Ranger Naturalist

Owing to the nearly "normal" snowfall of the preceding winter and its high water content, and in contrast to the several previous "dry" seasons, this is apparently a real "flower" year. A hundred flowers of a kind occur where but one was seen last year. On Mt. Hoffman plateau on July 13 spreading phlox (*Phlox diffusa*—*Phlox douglasii* of Yosemite references) was magnificent in its abundance, the low mats solidly covered with white to purplish flowers and forming an almost continuous cover over about two acres of slope.

On the north slope of the highest of the Echo Peaks on July 15 the

bloom on white heather (*Cassiope mertensiana*) was similarly lavish. At least one acre of slope with a nearly continuous growth of this shrub was covered by myriads of bells. Participants on the nature hike to the north side of Polly Dome on July 22 were rewarded by the exceptional display of bloom in the Sierra primrose (*Primula suffrutescens*). The rich royal purple of the flowers en masse caught the eye considerably before the spot was reached, and elicited delighted exclamations. The Sierra primrose, common at high altitudes in Sequoia National Park, is known to occur in Yosemite National Park at only four localities, the one in question being the easiest of access.

NOTES ON THE WESTERN PILEATED WOODPECKER

By Walter N. Powell, Ranger Naturalist

At 11:30 a.m. on August 6, in Camp 19 of Yosemite Valley, a pair of western pileated woodpeckers (*Ceophloeus pileatus picinus*) were observed working on an alder about 30 feet above ground. Five minutes later one bird flew to a ponderosa pine where it perched and preened on a horizontal limb. Ten minutes later the second bird joined it, and after some casual drilling, preened also.



Western Pileated Woodpecker

Both birds worked up the trunk. At about 80 feet from the ground they found a five-inch dead limb on which they both worked for half an hour. The birds worked on the upper

surface, then the side, and finally spent most of the time working belly-up on the underside of the limb, stripping off the bark and leaving a cavity about 18 inches long. The bracing by the tail feathers was clearly observed on this underneath operation.

Of special interest was the feeding of one adult by the other. One grasped the bill of the other, then came a rapid in-and-out shaking accompanied by a low buzzing sound. The birds then moved apart, one working on the same limb, the other backing down the trunk to a new location. Twenty minutes later the upper bird flew down and the feeding occurred again, this time silently. Both birds then went back to their foraging. Does the male feed his mate after the nesting season is past?

L. D. Moore, Yosemite Field Schooler of 1950, who had observed the birds with field glasses when they were lower down, reported one a male and one a female, since only one had the red stripe back of the mouth. Both had bright red crests, indicating maturity.

It is significant that this pair was observed continually for three hours within a small area of Camp 19.

A KING SNAKE INCIDENT

By Wayne W. Bryant, Ranger Naturalist

A Sierra coral king snake of the museum reptile exhibit came close to being a mortality, due to an uncouth habit of the California king snake, a close cousin.

A handsome specimen of the Cali-

fornia king snake (*Lampropeltis getulus californiae*) was obtained by a Blister Rust Control employee for the museum reptile exhibit in mid-July. The specimen was found at dusk as it was moving off a shoulder of the



California King Snake

Photo by Ralph Anderson

Wawona Road between Chinquapin and Wawona. The snake's reaction to being picked up and handled was one of docility. The snake cages all being occupied, the California king snake was temporarily placed in a cage with three smaller coral king snakes.

The new occupant reacted nervously when placed in new surroundings. Immediately the California king spied a Sierra Nevada garter snake (*Thamnophis ordinoides couchii*) through the screen in the adjoining cage. Excitedly it followed the garter snake closely with its nose upon the screen. The king snake's muscular body was tensed for action. After a few failing attempts to strike through the screen the California king began investigating the rest of its new environment. Only a few moments passed before it spotted in the same cage one of its own close relatives, a Sierra coral king snake (*Lam-*

propeltis multicincta multicincta). A little movement by this snake was enough to stir the California king to action. The latter struck at the coral king and also coiled around it. The California king began to engulf the head of the other snake immediately; so at this point the two had to be separated to save the life of the victim. A private cage was then prepared for the California king snake.

This incident is good evidence of cannibalism, known to be practiced by king snakes. Apparently they not only eat other kinds of snakes, but also members of their own kind, or genus. Although all species of the genus *Lampropeltis* are known to be cannibalistic, the species *L. getulus* shows his tendency to a greater degree. On occasion the California king snake may take on a snake larger than itself in a duel to the death, and usually finds no difficulty in strangling the victim with the fatal grip of its muscular coils.

1950 WILDLIFE CENSUS OF YOSEMITE VALLEY**By Wayne W. Bryant, Ranger Naturalist**

The 1950 class of the Yosemite Field School on July 5 conducted a census of some conspicuous wildlife species of Yosemite Valley. The students were divided into four groups of five, each group covering a quarter division of the Valley. Moving in a horizontal line and with individuals spaced at convenient sight distance apart, each group swept back and forth through its assigned section to cover the area as completely as possible. The census was taken between the hours of 6:30 a.m. and 3:30 p.m.

It must be borne in mind that results of this kind of census are not accurate, but they usually do show roughly the relative numbers of conspicuous wildlife forms. Census accuracy varies considerably between different species, depending on the behavior of each. As Lowell Sumner (National Park Service biologist for Region IV) stated to the 1948 class of the Yosemite School of Field Natural History (the name since changed to Yosemite Field School), it has been estimated that about two-thirds of the deer, one-third of the gray squirrels and chickarees, one-fifth of the ground squirrels, and most of the bear are missed by the census takers. An estimate of the actual animal populations in the Valley should take this into account.

The animals counted in the survey include seven species of mammals and three of birds. The results of the census are tabulated below.

A similar wildlife census was conducted in Yosemite Valley by the 1948 class. One of the chief values of a wildlife census is a determination of the fluctuations of animal populations from one year to an-

other. However, the comparison of results of the 1948 census with the 1950 census is but of slight value because the former was carried out with less spirit and accuracy.

The California mule deer is obviously the commonest large mammal in Yosemite Valley. Of the deer seen during the 1950 census there was one buck to every 1½ does. The 1948 census revealed a greater number of does per buck. Only two fawns were noted in 1950 as compared to six in 1948. This can be attributed to the earlier date of the census in 1950. Most fawns in Yosemite Valley are born during July. Those that were born in late June and the first four days of July probably were still well concealed at the 1950 census date. Most of the deer, as well as many other mammals counted, are concentrated in the upper end of Yosemite Valley where there is food easily available from tourists or campers for those animals with unparticular appetites.

Only two bears were seen during the censuses of 1948 and 1950. Especially on hot days such as the census date, the bears usually den up out of sight under the talus boulders at the edges of the Valley. The many evening bear raids on camps are evidence enough of the short-comings of the census count. An estimated dozen bears probably inhabit Yosemite Valley.

Squirrel populations, as do those of most rodents, fluctuate in cycles. They gradually build up in numbers until a climax is reached. An epidemic of disease or predation causes a sudden decline to minimum numbers, completing the cycle which is repeated over and

Animal	Scientific name	Areas*				Total all areas
		I	II	III	IV	
California Mule Deer— <i>Odocoileus hemionus californicus</i>						
Bucks		8	1	6	2	17
Does		5	1	15	4	25
Fawns		0	0	2	0	2
Total deer		13	2	23	6	44
California Black Bear— <i>Ursus americanus californiensis</i>						
Adults		0	0	2	0	2
Cubs		0	0	0	0	0
California Gray Squirrel— <i>Sciurus griseus griseus</i>		12	9	82	52	155
Sierra Chickaree— <i>Tamiasciurus douglasi albolimbatus</i>		11	19	71	62	163
Sierra Ground Squirrel— <i>Citellus beecheyi sierrae</i>		29	29	83	41	162
Golden-mantled Ground Squirrel— <i>Citellus lateralis chrysodeirus</i>		0	0	1	2	3
Merriam Chipmunk— <i>Eutamias merriami merriami</i>		4	8	12	16	40
Sierra Grouse— <i>Dendragapus fuliginosus sierrae</i>		0	0	1	0	1
Plumed Quail— <i>Oreortyx picta picta</i>		15	6	0	3	24
Band-tailed Pigeon— <i>Columba fasciata fasciata</i>		7	0	16	2	25

*Area I Pohono Bridge to El Capitan Bridge (west end).

Area II El Capitan Bridge to Swinging Bridge.

Area III Swinging Bridge to Ahwahnee Meadow and Camp 16.

Area IV Ahwahnee Meadow and Camp 16 to Iron Spring and Happy Isles.

over again. Mr. Sumner noted that the California gray squirrel was on the increase in 1948. It seems apparent that they are still increasing, for about six times the 1948 count were seen this year.

The chickaree population, which was at a low ebb in 1948, has increased rapidly during the last two years. The Sierra ground squirrel population is still greater than that of any species included in the census, in spite of periodic ground squirrel control effected around the habitations of Yosemite Valley.

The golden-mantled ground squirrel is rare in Yosemite Valley, for only three were seen during each of the two censuses. This is to be expected because this squirrel is usually restricted to the Canadian Life Zone forests of higher elevations.

Chipmunks are found less frequently than other squirrels on the floor of the Valley, except the golden-mantled ground squirrel. They, too, reach their greatest numbers in the Canadian Zone. The only chipmunk occurring at the 4,000-foot elevation of the valley floor is the Merriam

chipmunk, which is usually seen in the oak and manzanita of the lower talus slopes at the valley edges.

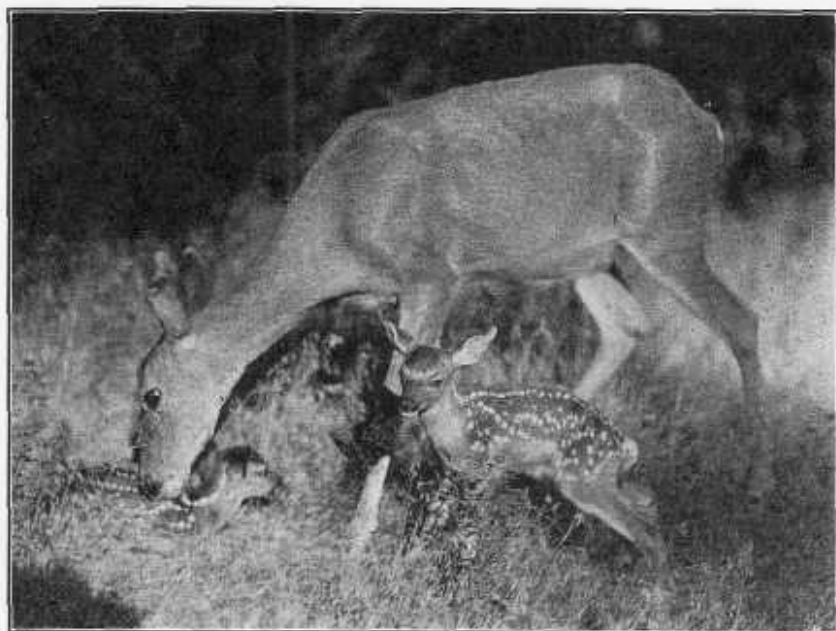
The Sierra grouse is a bird typical of the dense Canadian Life Zone forests and, therefore, rare on the valley floor. Only one was seen during the census, but at least three reports of this bird have been made during recent years.

According to the census and observations of this writer, the plumed quail appears to be more common this year than in other recent years on the floor of Yosemite Valley and elsewhere. It may be increasing in the wilder areas of the Valley because of the increase in forest undergrowth, necessary for forage and cover.

Band-tailed pigeons are probably more abundant than the census would indicate, although they are expected to be more numerous in spring and fall. They usually appear in flocks. In the summer of 1949 bands of up to 20 pigeons were often seen near each of the two stables in the Valley.

These censuses conducted by the Yosemite Field School will become of increasing significance if future surveys are carried out with interest and alertness, and if all parts of the

Valley receive equal and complete coverage. In this way the trend of many animal populations in Yosemite Valley can be determined and watched with interest.



Deer with Fawn

Photo by Harwell

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