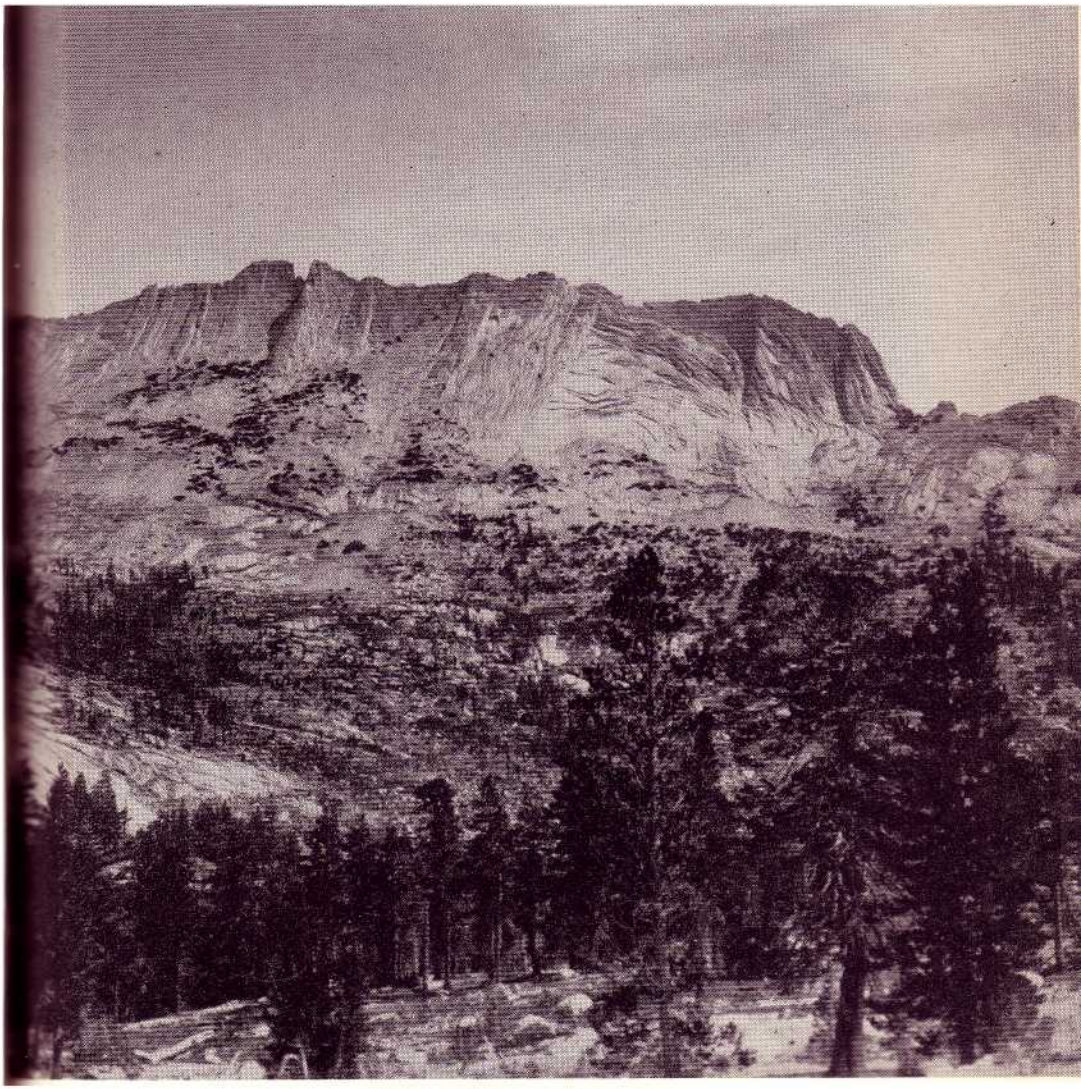
YOSEMITE NATURE NOTES



"Matthes" Crest — See p. 98

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Yosemite Nature Notes

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C. P. Russell, Superintendent — D. E. McHenry, Park Naturalist
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STARS OVER YOSEMITE

By F. Robert Kirschman, Museum Assistant, 1946

Most visitors to Yosemite National Park are duly impressed by the magnificent scenery which they see during the daylight hours, but how many fail to notice the grandeur of the nights in this clear mountain atmosphere? The atmosphere plays a tremendously important role in astronomy regardless of whether observations are made with the naked eye or with optical aid. In Los Angeles for example, the Griffith Observatory is equipped with a fine 12-inch Zeiss refracting telescope, yet due to the poor atmospheric conditions prevailing there, it is generally used with an eyepiece which results in a magnification of only 125 diameters. In Yosemite, on the other hand, greater magnification than this could be used with a good 3-inch portable refractor. Such an instrument is within the purchasing power of the average amateur astronomer.

In Yosemite Valley the view of the sky is limited of course by the surrounding rock walls. However there are more open places such as Toulumne Meadows which have camping facilities and are easily accessible by car. Recently, I had occasion to spend the night on the northeast shore of Lake Tenaya, one of the most beautiful lakes in the park. Just after darkness fell Venus and Jupiter shone like two great jewels as did also their reflections on the mirror-like surface of the lake. Both there and in Yosemite Valley I have been able to resolve Epsilon Lyrae into a double star with the unaided eye, a feat usually considered possible only with optical aid. This interesting star, which appears as a double through a small telescope, is easily located by its proximity to the bright star, Vega. On the night in question, although unaware of the two meteor showers scheduled for that date, I observed a number of faint meteors which could not have been seen except in such a clear atmosphere.

Just as the first faint light of dawn heralded the approaching sunrise, another herald, Orion, the king of the winter skies, rose majestically above the lofty granite ridge which parallels the lake.

Although in many cities the Milky Way is barely discernible, it stands out like a great star-studded cloud band in the Yosemite sky. David might well have been inspired by such a place as Yosemite when he wrote Psalm 19, for here indeed "the heavens declare the glory of God; and the firmament sheweth his handiwork."

THE CHIPMUNKS OF THE YOSEMITE REGION

By Martin R. Brittan, Ranger Naturalist

No visitor can travel far in Yosemite National Park without seeing chipmunks. Their quickness and sprightliness make them the most appealing of the many small mammals found here. So popular are the chipmunks with the crowds at Glacier Point, that if the Ranger Naturalists there could collect a dime for every bag of peanuts bought to feed the chipmunks, they could retire for life.

In the Yosemite region are found seven species of chipmunks, more than in any similarly sized area in the nation. These vary from the large dark-colored species of the middle altitudes to the small pale species of the deserts and alpine mountain tops. All of them are small brownish rodents, smaller than any of the ground squirrels, and with more pointed faces. Western chipmunks (genus **Eutamias**) have five black and four white alternating stripes down the back. Three black and two white alternating stripes are found on the sides of the face. These features distinguish them from any of the striped ground squirrels, which have either more or less stripes and never any facial stripes. The latter are usually much grayer in coloration. The golden mantled-ground squirrel is the only animal which might be confused with a chipmunk. It is larger, heavier, has four black and two white alternating dorsal stripes, no facial stripes and golden head and shoulders. The golden-mantled ground squirrel is more often than not called "chipmunk" by most visitors, but actually is easily distinguished from them.

Perhaps the easiest way to get to know the seven Yosemite chipmunks would be to consider each one as we would meet it on a west to east trip through the Yosemite region from Merced into Yosemite Valley, then over Tioga Road to Tuolumne Meadows, and over Tioga Pass to Mono Lake.

In Yosemite Valley itself the only species of chipmunks to be found is the Merriam chipmunk **(Eutamias merriami merriami),** formerly known as the Mariposa chipmunk **(Eutamias merriami mariposae).** It is a large form, with a length of head and body of 5¼ inches, and a tail measurement of 4¾ inches. It is the dullest colored of all the Yosemite chipmunks. The light stripes on the back are indistinct, not white; the spot behind the ear is grayish; general coloration is a dull reddish brown in the summer and grayish brown in the winter.

The Merriam chipmunk is found on the western slope of the Sierra Nevada at low and medium altitudes. In the Yosemite region it has been recorded from 700 feet altitude near Pleasant Valley, to 5,000 feet at Columbia Point on the Yosemite Falls Trail. In most places it does not get over 4,000 feet, being restricted to the upper Sonoran and lower Transition zones. It is restricted to brushy areas in the blue oak and digger pine belt of the Merced foothills, and to chaparral areas (buckbrush and manzanita) in the Yellow Pine belt. In Yosemite Valley itself it is rarely found on the valley floor, being mainly found in the brush and canyon live oak of the talus slopes, especially on the warmer north side of the Valley. It does not often climb trees, as do some other chipmunks.

This species bears its young earlier than do the others, due, of course, to its living at lower altitudes, where spring comes earlier. Females are already suckling young in May.

The darkest and dullest colored of the Yosemite chipmunks, as well as the largest (head and body 5½ inches, tail 4½ inches) is Allen's chipmunk, **Eutarnias townsendii senex (Eutamias senex).** It has the usual chipmunk pattern, but the markings are indistinct and the general tone of coloration is dark grayish. It is larger and duller than the Tahoe chipmunk, with less distinct stripes. It is distinguished from the long-eared chipmunk by more grayish coloration, shorter ears, and less prominent light spots behind the ears. It is distinguished from the alpine chipmunk by larger size and duller and darker coloration.

Allen's chipmunk is found in the Canadian Zone on the western Sierra slope from Aspen Valley and Chinquapin east to Glen Aulin and Washburn Lake, at altitudes of 6,200 to 7,700 feet. The lowest record (an exception) is 4,600 feet, below Vernal Falls at Lady Franklin Rock; the highest is 8,100 feet at Porcupine Flat on Tioga Road.

Although not normally a tree-climber, Allen's chipmunk is sometimes found in the lower branches and lower trunk of trees. It is usually found around logs and brush. In a few places its range meets that of the alpine chipmunk, but not that of the Merriam chipmunk, an interval of around 1,000 feet altitude usually separating them. Its range overlaps that of the Tahoe and long-eared chipmunks.

The handsome long-eared chipmunk **(Eutamias quadrimaculatus)** is one of the species commonly seen at Glacier Point. It is a large chipmunk (head and body 5½ inches, tail 3¾ inches), with markings as in other chipmunks, but with the general coloration dull, the ears proportionately longer than in other species, and the light spot behind the ear much larger and whiter. It may be distinguished from the Merriam and Allen's chipmunks by deep ruddy brown rather than grayish coloration, and by longer ears and whiter post-ear patches. It may be distinguished from the Tahoe chipmunk by larger size, longer ears, and darker tone of coloration.

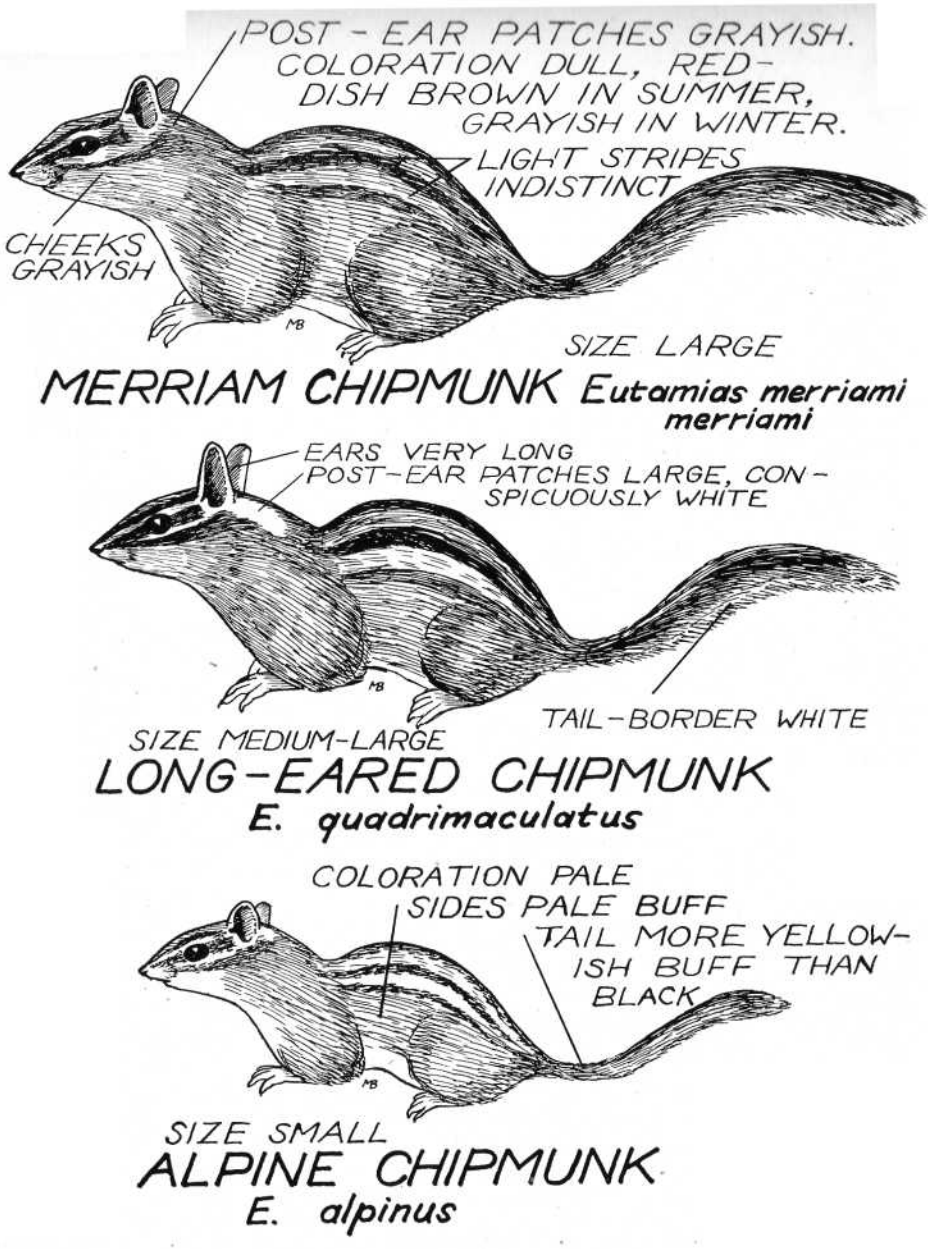
It is a common resident in Yosemite at altitudes of 5,000 to 7,500 feet, in a rather narrow belt of Transition and lower Canadian Zones. Outside of Yosemite it ranges down to 3,600 feet (Plumas County). It is found in forests around down logs, rock outcrops, and brush thirkets. The long-eared chipmunk is decidedly less arboreal than the Tahoe chipmunk, more so than Allen's chipmunk.

The range of the long-eared chipmunk is complementary to the ranges of the Merriam and Allen's chipmunks, the Merriam chipmunk, ranging below 5,000 feet, the Allen's above 7,000 feet. The long-eared resembles Allen's most closely but there is no evidence of intergradation, though their ranges overlap.

A variety of seeds and berries are eaten by this species, berries of the snowbush **(Ceanothus cordulatus)** and seeds of the sugar pine being two of the commonest articles of food.

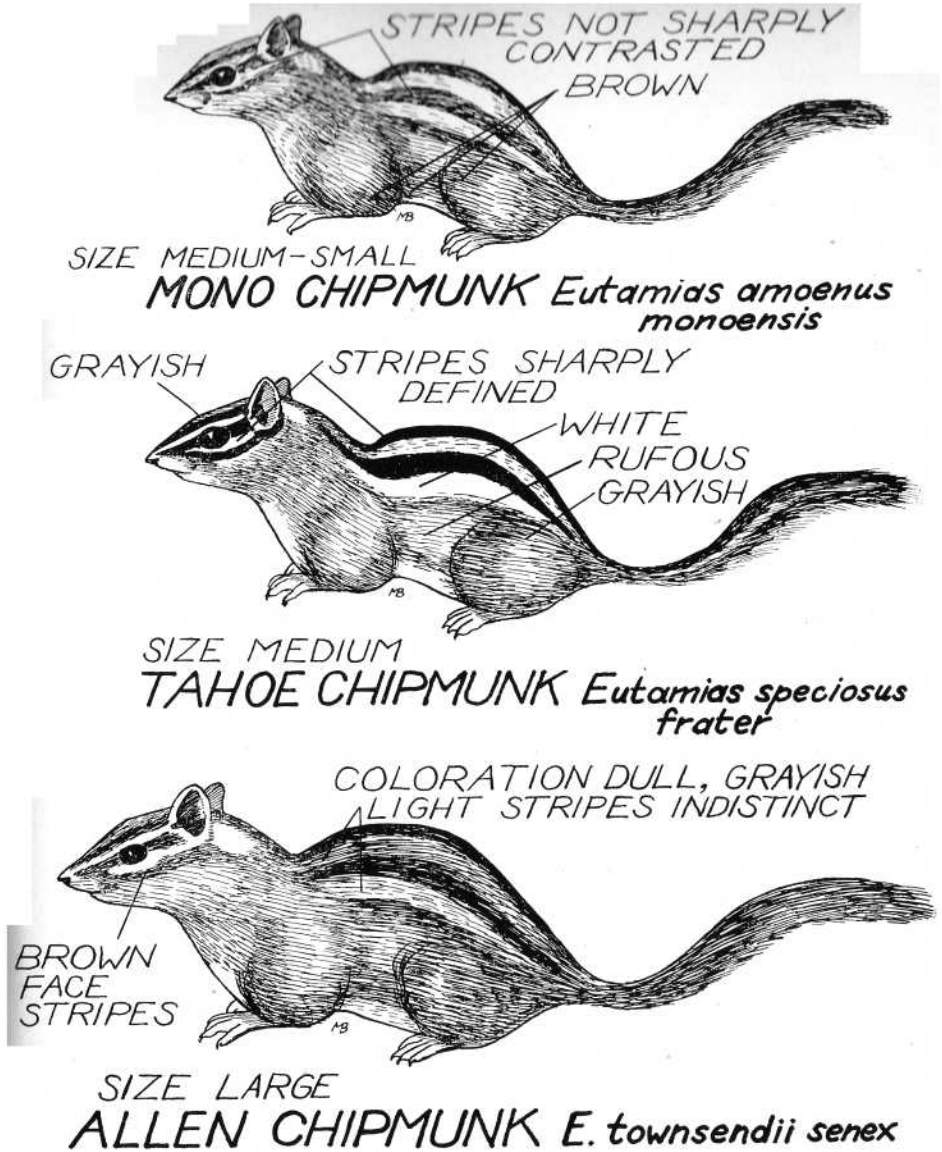
In early May this species comes out of hibernation, the young being born in early to late June. They go into hibernation again in early December.

The Tahoe Chipmunk **(Eutamias speciosus frater)** is by far the commonest of the Yosemite chipmunks. A medium sized chipmunk, it is smaller than the Merriam, Long-Eared, and Allen's chipmunks, and larger than the Mono, Sagebrush, and Alpine chipmunks. The head and body are 4¾ to 5 inches in length, the tail 3¼ to 3½ inches. The five black and four white alternate



stripes are sharply defined, the outermost light stripes being strikingly white. The five alternating facial strips are also well defined. The sides of the body are prominently colored reddish brown; top of head and rump grayish; underparts white. The patches of white behind the ears are smaller than in the long-eared chipmunk.

The Tahoe chipmunk is found in forested portions of the Sierras from 6,200 to 10,300 feet. Johnson (1943) notes that the distribution of **Eutamias speciosus** (of which **frater,** the Tahoe chipmunk, is a subspecies) closely parallels the distribution of lodgepole pine south of Pit River. He notes that



speciosus is also associated with red fir, Jeffrey pine, and chinquapin. It is found mainly in chaparral and interrupted forest, but is never far from trees. The Tahoe chipmunk is the only habitually tree-climbing species, though other species are frequently seen short distances up trees in time of danger.

Grinnell and Storer (1915) calculated that in the forest in general there were about two Tahoe chipmunks per acre, in the Canadian Zone, before the young are born, and one per acre in forested parts of the Hudsonian Zone. After the young are born, and in areas of abnormal concentration (such as Glacier Point), the number is increased several fold.

After a winter of average severity, mating takes place near the end of May, the young being born in late

June and early July.

The main staple food of the Tahoe chipmunk is, in most areas, Jeffrey pine seeds, with smaller amounts of grass and wild seeds being eaten. In the vicinity of Glacier Point the Peanut is the staff of life for the Tahoe chipmunk, the commonest chipmunk there, as well as for other members of the squirrel family.

The alpine chipmunk, **Eutarmias alpinius** is the smallest and palest of the Yosemite chipmunks (head and body 4 inches, tail 3 inches). The general tone of color is pale buffish, with the sides of the body pale buff, the tail showing more yellowish buff than black. The black dorsal strips are fainter and the light stripes are grayer than in most other species.

It is found in the Hudsonian Zone, locally in the Arctic-Alpine Zone, rarely below 8,000 feet. In the park area it is found from Mt. Hoffman and Mt. Clark eastward over the Sierra creast to Mono Pass and Ellery Lake. The northermost record is from Mt. Conness, the southern most record is Olancha Peak. Lowest altitudinal record is 7,600 feet at Horse Corral Meadows, Fresno County. Highest altitudinal record is 12, 600 feet, Mt. Gould, Fresno County.

Along the east side of the Sierra the Alpine chipmunk comes in contact with the Mono chipmunk, which is slightly larger and somewhat more brilliant in coloration. The two species are hard to tell apart, but their ranges only occasionally overlap.

The alpine chipmunk is shyer and more nervous than are others. It is predominately a rock dweller, sometimes being found around logs and stunted pine mats. It rarely climbs trees.

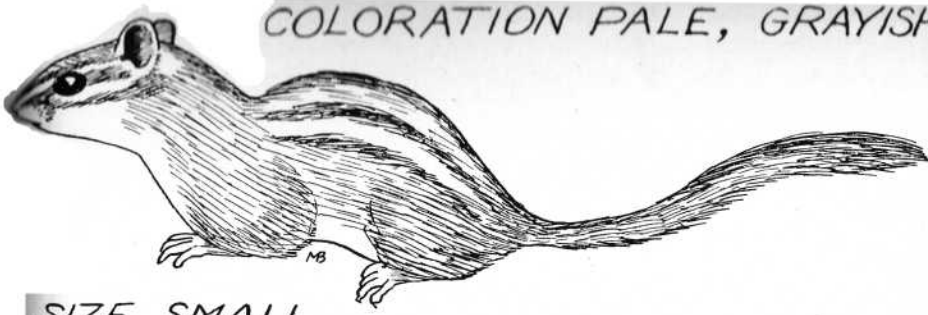
The young are born in late June and early July, and are of adult size by late October.

Food of the alpine chipmunks, consists mainly of grass, sedge, and herb seeds, with silver pine (Western white pine) and whitebark pine seeds also being eaten.

The Mono chipmunk, **Eutamias amoenus monoensis** is found in the belt of mountain mahogany on the east slope of the Sierra. It is a small species (head 6 inches, body 4½ inches, and tail 3¼ inches). The flanks are light brown. It may be distinguished from the Tahoe chipmunk by the paler coloration generally, less conspicuous white markings, and yellowish rather than reddish color at the bases of tailhairs. It may be distinguished from the alpine and least chipmunks by larger size, relatively longer tail, and darker general tone of coloration.

The Mono chipmunk is moderately common in the Canadian Zone of the east slope of the Sierra. It has been found from Mohawk, Plumas County, south to Convict Creek, Mono County, and from Cisco, Placer County, in the west, eastward to Mono Craters, Mono County. The lowest altitudinal range is 5,500 feet at Woodfords, Alpine County, the highest is 9,400 feet on the east side of Tioga Pass. In the Yosemite region it is commonest at Leevining Canyon. It is largely restricted to mountain mahogany, where it stays in bushy and rocky places. Its range meets, at certain points, the ranges of the Tahoe, alpine, and sagebrush chipmunks.

The sagebrush chipmunk of eastern California and other far western states is now recognized as **Eutamias minimus scrutato,** the least chipmunk, rather than **Eutamias minimus pictus,** as was formerly thought. **Pictus,** the stagebrush chipmunk of the Rocky Mountain Region and the Southwest is a slightly different form, but ours was formerly considered to



SIZE SMALL

LEAST CHIPMUNK *E. minimus scrutator*

be the same. The least chipmunk resembles the alpine chipmunk in size (head and body 4 inches, tail 3 inches), but the stripes on the back are dark brown and white and more lightly contrasted than in the latter. The general tone of color is pale grayish. The least chipmunk is somewhat smaller, has a shorter tail, and has lighter brown sides than the Mono chipmunk.

The sagebrush of the eastern Sierra slopes is the home of the sagebrush chipmunk. It is restricted to sagebrush, but is found among stands of juniper, pinyon, yellow and Jeffrey pine, aspen, and mountain mahogany, just so sagebrush is present. It is found in Upper Sonoran, Transition and Canadian Life zones. It is common on the sagebrush covered slopes of Owens Valley, rarer in the pinyon belt, and then common again in sagebrush on mountain tops over 9,000 feet.

The least chipmunk has been found at altitudes of 4,500 feet at Alturas, Modoc County, to 10,500 feet at Big Prospector Meadow, White Mountains. In the Yosemite area it is common at altitude of 6,400 to 8,000 feet from Williams Butte eastward all around Mono Lake.

Two of the chipmunks considered here are not found in the Park. However, they are common in the area just to the east, and may be seen by travelers on the Tioga Road and by hikers and fisherman who pass over the trails in and out of the Park along its east boundary. The other five species are abundant in the Park. With the exception of bear, and possibly deer, no animals are more interesting to visitors and provide them with more pleasure than the Yosemite Chipmunks.

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FRANCOIS EMILE MATTHES
1874 - 1948

By Donald Edward McHenry, Park Naturalist

"Occasionally in the history of science there appears a work so excellent, so comprehensive, that it becomes immediately a classic. Such

a newborn classic is the long waited 'Professional Paper' by Matthes on the Yosemite Valley (1)." This is, in part, the measure of the man whose lifework was brought to a close in his home in El Cerrito, California, on June 21, 1948.

Dr. Matthes (2) was an outstanding scientist with the heart of a poet. He was a leader in the field of geomorphology, an international authority on glaciers and an accomplished topographer. In the days when he was writing his "Professional Paper No. 160" as an employee of the United States Geological Survey, it was not easy for a scientist to gain the approval of his fellow scientists in the use of beautifully descriptive language in a scientific paper. While writing his observations on the Yosemite Valley, his superiors frequently returned his manuscript with requests to reduce his "flowery" language to scientific terms. They were, obviously, unable to throttle Dr. Matthes' enthusiastic appreciation of beauty of the scene he was studying. The result is a report in which appears a rare combination of scientific and esthetic writing, reflecting a mind of unusual scientific perception together with keen awareness of significant human values in the scenes before him. It is most fitting that such a personality be memorialized in naming for him a crest near Tuolumne Meadows in "his" Yosemite National Park—a crest which in its form and structure well exemplifies the rich character of the man.

America is the land of his adoption. Born in Amsterdam, Holland, March 16, 1874, he spent several years of his youth in Switzerland and "there became very fond of the mountains and the glaciers." Later he went to high school in Frankfurt-on-the-Main in Germany. "In 1891," he writes (3) "my mother, brother and I came to the United States. We boys came deliberately to study engineering at the Masachusetts Institute of Technology. I was graduated in 1895 as Civil Engineer but geology and glaciology have ever been my hobby and finally became my life work."

Although a starred scientist in the **American Men of Science** Dr. Matthes has generously shared his deep humanness with many who came to know him and admire him. As a Boy Scout leader no service was too great for youth. (4) One of his last acts was to send a scout knife and a scout handbook to two brothers of whom he was very fond.

Always a very active man Dr. Matthes was very busy even in his retirement as Secretary of the International Commission on Snow and Glaciers. It was in preparation for a meeting of this committee in Oslo, Norway, during the coming August that he expended his final energies. Various biographical records attest to many outstanding accomplishments of a lifetime. His constant source of inspiration was found in his beautiful companionship with his wife Edith who, together with his brother, remain to live in the memory of a great personality.

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