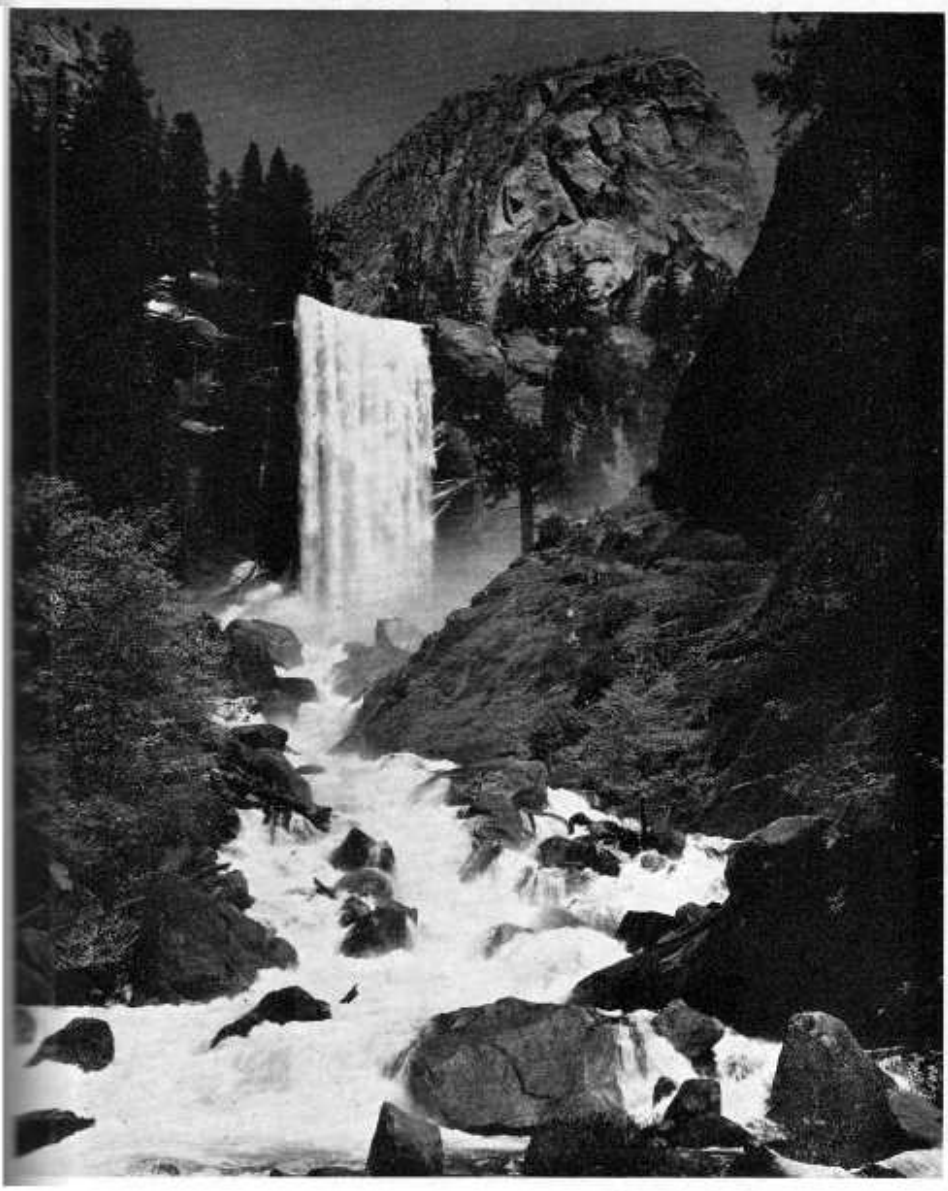
YOSEMITE NATURE NOTES

VOLUME XXXI · NUMBER 5 MAY 1952



Vernal Fall, Yosemite Valley
—Ansel Adams

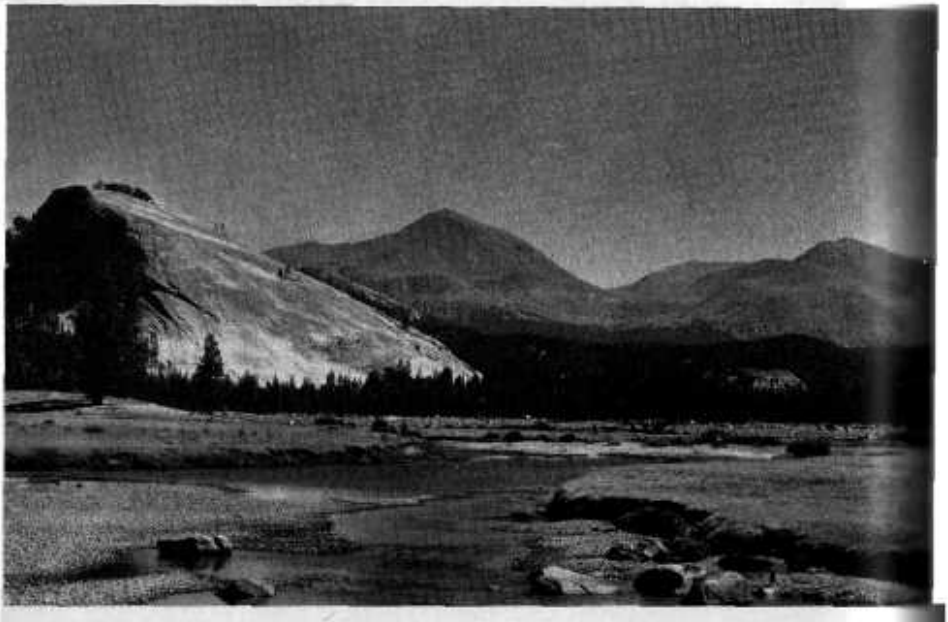


Photo by Ralph Ande

Tuolumne Meadows scene. Mount Dana in center, Lembert Dome on left, Mount Gibbs on ri

Cover Photo: Vernal Fall, Yosemite Valley. By Ansel Adams.

Yosemite Nature Notes

THE MONTHLY PUBLICATION OF
THE YOSEMITE NATURALIST DIVISION AND
THE YOSEMITE NATURAL HISTORY ASSOCIATION, INC.

VOL. XXXI — MAY, 1952 — NO. 5

THE TIMBERLINE GARDENS OF MOUNT DANA

By Carl W. Sharsmith, Ranger Naturalist

About a mile directly eastward from Tioga Pass the imposing slopes of Mount Dana arise from their base along Dana Meadows. Here they are clothed with mounting strips of forest interspersed with thickets of willow. A thousand feet or so altitudinally above this base the forest thins to scattered, low bushes of pines. Then only irregular patches of grassy slope and ascending ribbons of other herbaceous growth otherwise remain to hide meagerly the nakedness of rugged buttress and extensive fields of rock-talus. This irregular level of altitude—below which the scene in July and August is one of predominating verdure, and above, one of predominating barrenness—lies about an hour's climb above Tioga Pass. As seen from the pass the change in aspect governed thus by altitude would appear to be only of passing interest; yet it exemplifies one of the most significant boundaries in Nature—the timberline.

While to the close student of Nature the timberline has many points of interest, to the admirer of wildflower gardens it has a very special appeal. On the westerly slopes of Mount Dana this variable line where forest gives way to the treeless zone provides a splendid example of floral wealth during summer's height. Profuse on moist slopes, scattered among dry gravels, or tucked away in damp crevices among what are often the most colorful of rocks, gardens of flowers are to be found. At the peak of their beauty they are sufficient to provoke the admiration of all who pass by. In all summers these gardens appear, less showy during dry seasons, or far more luxuriant in seasons following abundant winter snows. The kinds of flowers composing them develop simultaneously, or follow one another in regular succession on a schedule closely timed with the calendar weeks. Some of the flowers are large and conspicuous; others are tiny but nonetheless perfect in form. Most of the plants are perennials—blooming year after year from the same sturdy roots. They have to be, in order to survive! But to explain this, and many another special feature of the timberline plants, would be another story.

Perhaps the best way to describe a few of these gardens and some of their flowers is to follow the progress of a normal season. By about the first week of July, in drier and hence warmer gravels, the low circular

Photo by Norman Herkenham

Spreading Phlox

mats of the spreading phlox[1] are already becoming closely covered by their fragrant white to pale lavender flowers. They often stand nearby the moister swales where gardens of quite another sort lie brown and dead-looking, still in winter's sleep. In other neighboring hollows snowbanks lie about, and under them slumber gardens which will awaken the last of all. But the snowbanks are melting. On the slopes immediately below them, and right on schedule, the diminutive steer's head[2] is at the height of bloom. Common on fine gravels moistened by the melting snows, yet rarely seen by the visitor unless pointed out by the naturalist, its white to pale pink flower bears a striking resemblance to the head of the horned bovine. The flower is solitary at the tip of the slender, decumbent stalk, and usually only one is borne by each plant. Elsewhere on the adjacent slopes, benches with marshy spots are brightened by the yellow flowers of the alisma-leaved buttercup[3] and the nodding purple blossoms of the alpine shooting star.[4] On the drier sites beneath sheltering groves the rare purple fritillary,[5] with its well-camouflaged purplish-brown flowers mottled with green, stands hidden.

But while these and many other harbingers of the timberline summer are briefly flowering, the brown, matted turf on the sun-warmed slopes is coming to life, and lusty green shoots are everywhere appearing. The resurrection continues rapidly, and in another week or two, slopes where the steer's head bloomed witness the flowering of the timberline annuals. Relatively few in kind but numerous in individuals, they include a woodland star,[6] with white jagged-edged petals and stems with curious tiny purplish-red bulbils crowded in the leaf-axils; a nemophila,[7] with bluish flowers and spatulate, three-toothed leaves; a whitlow-grass,[8] with minute, yellow, cruciform, mustard flowers; and multitudes of the smallest one of all—the northern linanthus,[9] with stems and branches as slender as threads, and almost invisible pink flowers.

Simultaneously with the flowering of these annuals the development of the garden which is to provide the greatest mass of color is getting well under way. Along the lengthy, wide but shallow, well-watered trough-shaped hollows that extend down the mountainside, deep in the interstices of coarse rock-detritus, or covering the ground in a continuous turf, are massed the sturdy perennials which reach the peak of their flowering in the interval between the latter half of July and the first week of August. Shooting up to an average height of about 3 feet in the favored spots, the rich growth of flowers on these crowded plants is such that it produces solid patches of color visible from the road a mile away. Amid the blue displayed by the flowers of the tall lupine,[10] which makes

1. *Phlox diffusa*
2. *Dicentra uniflora*
3. *Ranunculus alismaefolius* var. *alismellus*
4. *Dodecatheon alpinum*
5. *Fritillaria atropurpurea*
6. *Lithophragma bulbifera*
7. *Nemophila spatulata*
8. *Draba stenoloba*
9. *Linanthus septentrionalis*
10. *Lupinus longipes*

up the greater bulk of the garden, are vivid splashes of flame-color from an Indian paintbrush.[11] Widely dispersed among these is the royal blue of a loosely branching larkspur[12] contrasting pleasingly with the common blue of lupine, while clumps of arrowleaf groundsel[13] with their masses of yellow flowers variegate the scene still further. Meanwhile, along the drier borders of this garden, thickets of willow are enlivened by the heavenly blue of one of the stickseeds or false forget-me-nots.[14] In the moist edges and arising from herbage clumps 3 to 20 feet wide, the narrow racemes of deep blue flowers on the giant larkspur[15] are thrusting upward, soon to reach a height of 5 or 6 feet.

During the progress of this main show the drier rock-gardens are flourishing. Their ledges are filled with the pale lavender flowers of the pungent mountain pennyroyal,[16] and their gravelly benches with scattered low cushions of sulfur-flowered eriogonum[17] and of another eriogonum[18] with spherical, whitish to deep rose heads of flowers. The latter arise on naked stalks from the matted leafy base, like pins in a pincushion. In crevices nearby are the flowers of the locally rare blue flax,[19] while in similar sites but on the higher slopes are numerous clumps of the high-mountain columbine,[20] adorned with their cream-colored flowers.

By about the third week of August the apex of flowering on the timberline slopes is mostly past. Summer is on the wane, and the seed crop must be ripened. Hurriedly, through the short growing season lasting approximately 90 days, the plants must complete their whole cycle of growth, flowering, and fruiting, ere with lowering temperatures and increasing drought the period of dormancy ensues.

Indian Paintbrush

In their life activities closely geared to the march of the seasons, the different kinds of flowering plants making up these timberline gardens on Mount Dana are in the aggregate very many—probably not less than two hundred. Admittedly many of these or their flowers are small and inconspicuous, but they all contribute to the general display of luxuriance that attracts and holds the attention of the flower-lover during the height of the flowering season.

11. *Castilleia miniata*
12. *Delphinium polycladon*
13. *Senecio triangularis*
14. *Hackelia jessicae*
15. *Delphinium glaucum*
16. *Monardella odoratissima*
17. *Eriogonum umbellatum*
18. *Eriogonum ovalifolium*
19. *Linum lewisii*
20. *Aquilegia pubescens*

THE GOLDEN/RAINBOW HYBRID TROUT OF YOSEMITE NATIONAL PARK

By Orthello L. Wallis, Park Ranger

The presence of the golden/rainbow hybrid trout *(Salmo agua-bonita* × *Salmo gairdnerii irideus)* in Yosemite National Park was first brought to my attention in 1950. Seasonal Park Ranger Clyde Quick and Ranger Naturalist Richard Robinson discovered these fish in the lower reaches of Echo Creek. In 1951 several anglers noted on their volunteer creel census forms the existence of golden/rainbow in the upper portions of Echo Creek in the vicinity of Reymann and Nelson Lakes.

While making trout investigations during last summer, I took several specimens from Echo Creek between these two lakes. I found one also in Fletcher Creek just below Emeric Lake. The hybrids were reported from Vogelsang Lake as well. Further investigations undoubtedly will reveal other localities within the park where they are present.

The discovery of these cross trout is not surprising. In Reymann Lake at the source of Echo Creek and in Vogelsang and Townsley Lakes at the head of Fletcher Creek, golden trout were planted many years ago. Of these three lakes, the fish established themselves only in Townsley Lake. Since then rainbow trout have been introduced into the lakes. Some of these rainbows have spawned with the golden trout established in the streams below the lakes, and have produced the golden/rainbow hybrid.

Experience has shown that the characteristics of the rainbow are dominant and that eventually the golden strain will lose its identity entirely. For this reason it is the present National Park Service practice to refrain from stocking other species of trout in waters where golden trout are established.

Golden/rainbow trout possess a combination of the identifying features of each parent species. In some specimens the characteristics of one strain appear most prominently. For comparison, the distinguishing features of the rainbow and the golden trouts are listed:

Golden Trout	Rainbow Trout
1. Scales very small.	1. Scales much larger.
2. Top of head and upper parts yellowish-olive.	2. Back often greenish to bluish gray.
3. Bright red or carmine band along each side. Band crossed by 10 or so vertical bars or parr marks even in adult stream trout.	3. Violet to reddish stripe along each side. Parr marks absent in adult fish.
4. Below band, coloration bright golden yellow.	4. Below stripe, coloration fading to white.
5. Deep orange to red stripe along belly from tip of lower jaw to anal fin.	5. Belly usually white or steel gray; sometimes bare tinge of red present but never full-length stripe.
6. Black spots, which are generally larger, confined mainly to dorsal fin, tail, and area behind adipose fin.	6. Small, numerous, irregular black spots on head, body, and fins.

BLUEGILL REPORTED FROM LUKENS LAKE

By Orthello L. Wallis, Park Ranger

An unexpected occurrence of extraordinary significance was the capture of a bluegill *(Lepomis macrochirus)*, of the sunfish family, in Yosemite National Park. The 6-inch specimen, reportedly taken from Lukens Lake, was shown to Seasonal Park Ranger W. Bayard Buckham at Crane Flat Ranger Station in July 1950. He identified the fish as a bluegill.

Trout species are the only fishes which have been officially planted in the park waters. This is the first record of the catch of any other form of game fish which has been brought to our attention. The bluegill is definitely not native to Yosemite or to any western state, in fact.

It must be assumed that this bluegill had been released in Lukens Lake by an angler using live bait in violation of park regulations. General National Park Service regulations prohibit the possession or use of live or dead fish as bait within Yosemite National Park. Serious damage to fishing could result from such an indiscriminate introduction. No further bluegills have been reported and it is believed that this species has not become established.

It is regrettable that this unusual fish specimen was not collected and preserved for the Yosemite Museum where it could have been available for further reference and study. I am indebted to Ranger John Mahoney for first bringing this record to my attention and to Mr. Buckham for his information.

A BETTER BEAR

By Allen W. Waldo, Ranger Naturalist

It has been estimated that Yosemite Valley is able to support only about three or four bears on their natural forage. With an abnormal population of several times this many in the valley—attracted by the prospect of getting food through human activities — obviously the bears must resort to raiding, begging, and other unnatural methods, often destructive. They are, of course, unfortunately aided and abetted by the general public—a dangerous practice, and in violation of park regulations.

It was a pleasure, therefore, to see

a bear last summer being a good citizen for a change, unmolested by would-be artificial feeders. The event occurred during the annual wildlife census of the Yosemite Valley floor, conducted by the 1951 Yosemite Field School. We had come upon one of the four survey groups as they were completing their assigned sector just below Swinging Bridge. One of the Field School members reported that there was a bear in a nearby tree, so Naturalist Wayne Bryant and I went over to see it. At this place is located an old apple tree dating from the early days of settlement in the valley. A small yearling bear was climbing into the tree. He had some difficulty getting up among the branches, but finally, after nearly falling out several times, he made it.

When he succeeded in reaching a stable position he began swinging his head around and biting off the small green apples within his reach. Unfortunately for him, most of the fruit was out near the ends of the branches where he was unable to reach it. He soon gave up in this section of the tree and moved rapidly on upward. In a very short time he was at the top, standing on the small upper branches, with his belly nearly straddling the top. Here he was near enough to the branch ends so that he was easily able to reach many of the apples, which were only about an inch and a half in diameter. He stood there in clear view of the highway, swinging his head around from side to side as he grabbed the apples.

As I walked away I felt that it was lucky for the bear that his stomach was much better able to stand the bombardment of this green fruit than that of a small boy would be. I was even more happy, however, to see that here was a bear carrying on natural foraging, and not being spoiled, and prepared for possible future destruction, by the human animal.

ALPS

By Joseph E. Wright, Field School, 1951

When does alp mean help?

That isn't simply a little jest. In the Tuolumne Meadows region a visitor almost inevitably finds himself on one or more of the trips among the peaks. Their heights invite the efforts of climbing, but periods of rest become increasingly pleasant as one rises solely through the actions of leg muscles.

Suddenly, though, the climb levels off, and a green meadow appears, gently sloping to a clear, singing stream that may be scarcely a foot or two wide or perhaps wide enough to require the use of several stepping stones or a log in order to cross it.

Well up on the slope of Mount Dana, near timberline, we first came upon such an "alp" — or alpine meadow — and in its shelter, coolness, and sunken stream we found refreshment. We also found in the meadow a wealth of plant types apparently enjoying the thickly sodded ground which overhung the brooklet

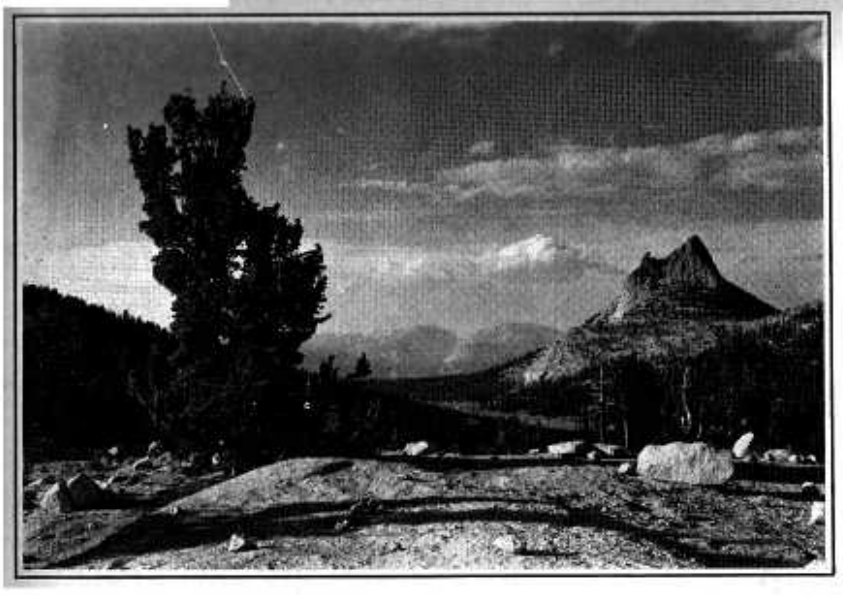


Photo by Ralph Anderson

Cathedral Peak from Cathedral Pass

of melt-water. Long centuries had passed in producing the soil base for the many plants.

Our second meadow pleasure took place at a spot seemingly under towering Cathedral Peak on our way up the trail to Echo Peak. This little alp was a bit lower than that on Dana and was somewhat larger. Growths of ground-hugging types were luxuriant on either side of the undercutting stream. Patches of lodgepole pines, extensive beds of waving, purple-pennanted lupines, even mushrooms were spread among the greens. Looking closely at the ground, one could see ants scurrying in their brief summer busyness. A fly buzzed loudly in that ground-level stillness. The water gurgled nearby. We wondered at the orderly arrangement of the giant granite blocks above us, appearing to be laid by some great stonemason without benefit of restraining mortar. Feathery cirrus clouds fanned out around Cathedral Peak, standing out against the brilliant blue of the sky. Near the upper edge of the meadow we met the hardy whitebark pine and some of its smaller neighbors—the white heather *(Cassiope mertensiana)*, its pendant white bells made whiter by the five red sepals; the rare, fleshy-leaved *Claytonia bellidifolia* of the purslane family, only recently found in the Sierra; and little *Sibbaldia procumbens*, found on high slopes, the same the northern hemisphere over.

A third area of glorious high meadows is that above Upper Lyell Base Camp and below the precipitous climbs to the snowfields and glacier of Mount Lyell. What a place to recline and talk about the glacier visible above us, or the timberline so nearly on a level with ourselves, or the types and numbers of plants characterizing such a setting! A young water ouzel entertained us. The warming sun comforted us. The sod beneath provided a soothing cushion. Life is good at times such as that. Grassy meadows and the opportunity to lie on them and to let

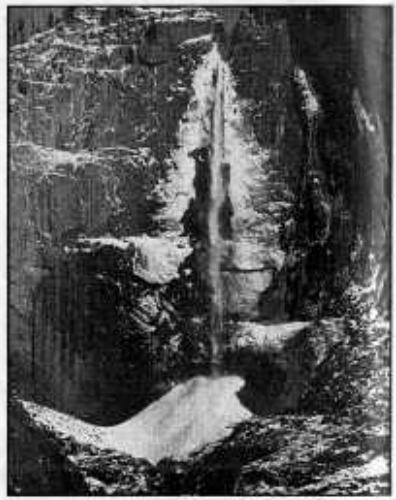
one's mind consider what his eyes take in—these are superlative mates for the production of top-quality thoughts and incentives to protect the wilderness areas for all to come to see and feel.

Hiking in the high country, especially when one goes "cross-country" without benefit of trail, is spiced often by the sudden appearance of a tiny alp, perhaps between two granite masses, perhaps atop a ledge-like bench, perhaps around a huge jumble of boulders that had appeared to be mere further obstruction to one's movements. Alps are helps of the first order. Visit one and enjoy yourself. You'll learn that it is no joke.

AN OBSERVATION OF THE YOSEMITE FALL ICE CONE

By Sterling S. Cramer

On April 20, 1952, I visited the ice cone at the foot of Upper Yosemite Fall. Each winter this huge cone develops by an accumulation of ice from several sources — masses of snow and ice which have floated over the brink, frozen spray from the waterfall, and slabs of frost that form on the face of the cliff during each cold night and then drop onto the cone as daytime brings warmer temperatures. The cone has been known to exceed 300 feet in height and to contain an estimated volume as great as 25 million cubic feet. This year it attained one of the greatest heights on record.



Ice Cone of Yosemite Fall

My route led via "Sunnyside Bench" to the top of the lower fall, then up a long sloping ledge to the next bench above and from there I came out in the large bowl at the foot of the upper fall. This placed me where I could view the cone in its entirety, and especially where I could see the water issuing from the tunnels in its base through which Yosemite Creek emerges.

At about 3 p.m. I noted that a shift in the wind brought the full force of the waterfall into play against the summit of the cone. At that time the cone was quite weathered and the lip of the crater at its top was fissured. After the fall had driven against the top of the cone for a few minutes, suddenly from one of the tunnels at its base where the main body of the creek was emerging there appeared a flow of broken ice which continued until the wind shifted again, moving the fall away from the summit of the cone. Almost at once the flow of ice stopped.

This entire phenomenon was repeated about 10 minutes later. Between times, the water of the creek was apparently running clear and ice-free.

JOHN M. MILLER, 1882-1952

By Emil F. Ernst, Park Forester

It is with deepest sorrow that we announce the passing of one of Yosemite's greatest friends—John M. Miller, entomologist. A friend who tried his best to stay the hand of the enemy of Yosemite's magnificent forests—bark beetles.

John Miller, often erroneously called Doctor Miller, which he disliked, became acquainted with the Yosemite forests in 1917 when he made a state-wide survey of the bark-beetle infestations. From then until his death on March 31 in Mexico City he was intimately connected with all the forest insect developments and activities of the park. Among the many papers and articles he wrote in connection with his work were several for early volumes of *Yosemite Nature Notes.*

John, as he was affectionately and desirably known by many Yosemite residents, was born at Parlier, Fresno County, California, on August 31, 1882. He graduated from Stanford University in 1908. He began his long career in the federal service as a temporary forest ranger at Jerseydale in the Mariposa District of the Sierra National Forest. In 1911 he prepared a paper on *Ips* (a genus of bark beetles) for the U.S. Forest Service, which seriously disturbed the outstanding entomologist, A. D. Hopkins, of the Bureau of Entomology in the Department of Agriculture. Hopkins had Mr. Miller transferred to that bureau, with which he remained until his retirement on November 1, 1951.

Entomologist John M. Miller was in charge of the Forest Insect Laboratory at Berkeley, California, from 1928 to 1942. During these years he was to become well known in other national parks of the West, although his main love was for Yosemite with which he was very well acquainted throughout his entire career. He made a great number of field trips with Yosemite personnel, often far off the beaten path.

His capabilities were internationally recognized by his appointment as Consulting Entomologist with the Government of the Republic of Mexico through the auspices of the Food and Agriculture Organization of the United Nations. He was very happy with this appointment. An illness of but a few days terminated with his death. The remains were brought from Mexico City by plane and he is buried in Mountain View Cemetery in Oakland, California.

Yosemite has lost a dear friend.