

# YOSEMITE NATURE NOTES



Volume IV

October 31, 1925

Number 19

## VACATION-LAND IN OUR HOMES THROUGHOUT THE YEAR

Few of us are fortunate enough to spend more than a short vacation each year in our mountain playgrounds. How many of us, as we stood upon the heights and felt the thrill of fellowship that comes with first-hand acquaintance with the birds, the flowers, the trees and the mountains themselves, have wished that the inspiring influence of these associations could be with us throughout the year in our everyday life.

Our government is doing its part to help us to more thoroughly enjoy and understand our great playgrounds, the National Parks. In Yosemite we find a splendid museum and a corps of naturalists who conduct daily field trips along the trailsides and who deliver evening campfire lectures on a wide variety of natural history subjects. But why should we be satisfied with but an introduction to the trailsides of our beloved Sierra? Is there no way in which we may continue our friendship with the Big Country during each month and each week of the year?

There is a way! Lovers of the California mountains have organized to interpret and present in popular form all of the manifestations of Nature of the Sierras and more particularly of Yosemite National Park. Primarily the YOSEMITE NATURAL HISTORY ASSOCIATION concerns itself with the living things of the Yosemite region; yet it must necessarily be a factor in inspiring a regard for American Wild Life in general.

YOSEMITE NATURE NOTES, which has been published in mimeographed form by the Park Naturalist for a number of years, has been adopted as the official organ of the Association. Cooperating with the government, the Association prints "Yosemite Nature Notes" weekly during June, July, and August and monthly throughout the remainder of the year, each of the twenty-four issues being sent to all members.

If you are one of the hundreds of thousands who love Yosemite, you will wish to keep in touch with her through the Association. There are hundreds of thousands of others who have no conception of the big message of the Out-of-doors. You will want those uninitiated to learn of what the Park has to offer.

Act now! Fill out the enclosed application for membership and mail it with a check or money order for \$2.00 to The Park Naturalist, Yosemite National Park, California. Every cent of the \$2.00 will be devoted to keeping you in touch with your Yosemite.



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## GLACIAL POLISH

By C. P. RUSSELL

What Yosemite high country hiker could fail to be impressed with the glassy granite surfaces found everywhere along the stream courses east of the valley? Even the native Indians found this natural wonder too much for their stolid disposition, and John Muir relates how he was approached by a native who questioned: "What make 'um the rock so' smooth at Tenaya?"

The rock carving of the high country appears more recent and better preserved than do the erosional features of the Yosemite valley and the canyons lower down. To the tourist who has also visited Rainier National Park and examined the polished rocks of that region of mighty glaciers, it must seem that Sierra glaciers melted but yesterday. For the granite of the old glacier paths of the Sierras in the summit region exhibits the same smooth, glassy polish; indeed, for the most part it is a smoother, more mirror-like polish than the rocks of Rainier are capable of taking.

F. E. Matthes of the United States Geological Survey attributes this marked difference in freshness of the ice marks in the Yosemite high country and lower country to the divisions of the ice age into two or more epochs—a succession of glacial extensions, separated by intervals of milder climate. With each period of low temperatures there was a steady creeping of great ice tongues from the summits down through the canyons to val-

leys of the lower levels. Then with the change to warmer climate there came the steady recession of the rivers of ice, until they drew back to the crests from which they started. Such a condition of affairs resulted in the summit region's undergoing continual ice erosion, while the lower canyons were acted upon for but a fraction of the time. Then, too, it is a fact that the last ice epoch is not yet ended. At the present time many lingering remnants of the once mighty glaciers may be found on the shaded sides of the Sierra peaks. The ice has been slowly receding for thousands of years. The granite surfaces of the lower canyons were uncovered long before the high country was freed from its ice mantle. Consequently, weathering has exerted its decomposing influence upon the lower glacial polish for a much longer period than it has in the summit region. Within the Yosemite valley, where the most wonderful grosser features of ice carving are seen, none of the finer glacial polish has persisted. A little above the valley, in the Little Yosemite, small patches of the mirror-like surface may still be found on the harder parts of the granite. Still higher, as at Merced and Tenaya lakes, great areas, acres in extent, are just beginning to yield to ravages of the weather. Above these places, in shaded cirques at the very crest, the granite is yet bound by eternal ice, and the friction of the moving mass is today adding to the gloss of the surface below.

## YOSEMITE EDUCATIONAL SERVICE CLOSES BEST SEASON.

**D**O PARK visitors wish to "know their parks"?

Results of the Yosemite Nature Guide Service during the season just ended would indicate that the spirit of "wanting to know" is indeed manifested. Better than ever has been the response from the public, so much better, in fact, that extra naturalists were called upon to enlarge the free service that has become a Yosemite institution. Ten naturalists were busied in 1925, whereas, in the past, six were employed.

Outside organizations have recognized the desirability of furthering the work and through the co-operation of the American Association of Museums, the Yosemite Park and Curry Company, the Sierra Club and the Yosemite Natural History Association the four extra staff members were salaried. Innovations of the year were the establishment of branch museums and the organization of a field school of natural history.

At the new Glacier Point lookout a naturalist has been in constant attendance. Trips afield have provided opportunity for visitors to become acquainted with the wonderful flora and fauna of that point on the "rim," and illustrated evening lectures at the Glacier Point Hotel have conveyed the true story of Yosemite to guests of that unique resort.

In Tuolumne Meadows nature guides have had the use of the Sierra Club's Parsons' memorial lodge as headquarters. There, many travelers on the Tioga road have heard the message of the parks. A cut flower show was maintained at the branch museum and a nature guide in attendance has aided visitors in interpreting the wonders of the Hudsonian zone. Daily field trips were made with small parties and each evening informal camp fire talks were given at the Tuolumne lodge.

Nine six-day trips to the summit region, making use of the hikers' camps, were made. These parties were in most cases small, but the results were nevertheless worth while. Six consecutive days with the same group of people enable a naturalist to convince his listeners of the satisfaction resulting from being nature-minded. Most enthusiastic expressions of gratitude have come from visitors who have availed themselves of these high-country nature study trips.

On the valley floor the old museum building has been crowded with visitors. Geology talks scheduled there regularly have attracted numbers who sought knowledge of the genesis of the marvelous

gorge. Four, and sometimes five, nature guided field trips have been made daily and in spite of the greater frequency of trips the average attendance has been better than ever. As usual, full day trips to points on the "rim" have been made each Saturday. As an experiment nature guides have been detailed to accompany saddle parties and certain auto-bus tours. Results encourage further attempts to enlarge the service in this field. Evening lectures at Camp Curry and Yosemite Lodge, offered four times each week, have reached the usual large audiences that gather at these resorts to enjoy the programs.

A new phase of service to nature lovers was the Tuesday evening museum camp fire. Groups of one hundred or so gathered once each week around the great fire built at the rear of the new Museum building, and there informal discussions of topics of particular interest to the group assembled were discussed.

The organization of the Yosemite Field School of Natural History, under the direction of Dr. H. C. Bryant, has instituted a new branch of the educational work that will care for the demand for systematized study of field methods. But twenty students can be accommodated in this school, and that number quickly signed up for the 1925 work. These students, after seven weeks of careful work, have returned to their twenty respective homes, each qualified to originate a new ripple of enthusiasm in the growing nature-study movement.

Some readers will be interested in noting the growth in Yosemite's educational work. To those interested, the following figures will be significant:

Museum attendance, May, June, July and August: 1924, 34,513; 1925, 53,243.

Lectures: 1924, 37,736; 1925, 50,320.

Field trips: 1924, 2618; 1925, 9912.

Total attendance: 1924, 74,867; 1925, 113,875.

—C. P. Russell.

## ON THE SIERRA'S SUMMIT

By D. D. McLean

ON SEPTEMBER 12, I left Yosemite for the summit region, in the vicinity of Saddlebag Lake and Tioga Pass. Leaving Yosemite at 8 o'clock in the morning, I arrived at Saddlebag Lake about 4 in the afternoon, to find the country bleak and cold with a strong wind and an overcast sky that threatened snow at any time. A strong southwest wind swept the clouds by at a terrific pace.

I piled my bedding and camping outfit out and taking them on my back started up the east side of Mt. Conness.

Animal life was scanty on the way up the mountain side, only an occasional Alpine chipmunk, cony, Rosey finch, junco, or Audobon warbler appeared to break the monotony of the boulders and snow and wind twisted lodge pole pines and junipers.

Shortly before dusk I reached a small glacial basin at the limit of the trees and camped for the night. The lodge pole pines furnished a good supply of wood that gave out plenty of heat, thus counteracting some of the cold that was bound to creep in around the corners to some extent. A terrific wind was now blowing and it seemed certain that it would snow before long.

About 8 o'clock the snow came flying nearly level before the wind. It stopped about 11 and the sky became partially clear and it incidentally became colder. About 3 it clouded up again and it snowed until about 8 in the morning.

I kept the fire going all night, and breakfast was consequently cooked in short order and my bed dried out before the fire. This camp was at about 11,400 feet altitude, in a shallow canyon on the eastern side of Mount Conness.

I climbed on up in the morning, but there was nothing of interest moving about, so I started back down to Saddlebag lake, arriving about noon or a little before. I fished a while and caught several fine Cutthroat trout before starting back out of the mountains.

On the way out from Saddlebag lake to the road at Leevining creek I saw a fine red fox running away at about fifty yards distance.

It began to snow again as I came into Tioga pass, but soon ceased, and by the time I reached Tuolumne Meadows the sky was fairly clear. Great flocks of Brewer blackbirds were wandering about over the meadows. These birds nest at a low elevation (3000 to sea level) and move up to the higher mountains later, after the young birds are able to move or less look after

themselves. Juncos, Chipping sparrows, Hudsonian white-crowned sparrows, robins, Cassin purple finches, Mountain bluebirds, Audubon warblers and several less common birds were more or less in evidence most of the time; white Belding ground squirrels, Golden-mantled ground squirrels, and at least two kinds of chipmunks, probably Alpine and Tahoe, made up the majority of the mammals that were seen about the meadows. One mountain coyote was seen out in the middle of the lower end of the meadows and made off at my approach.

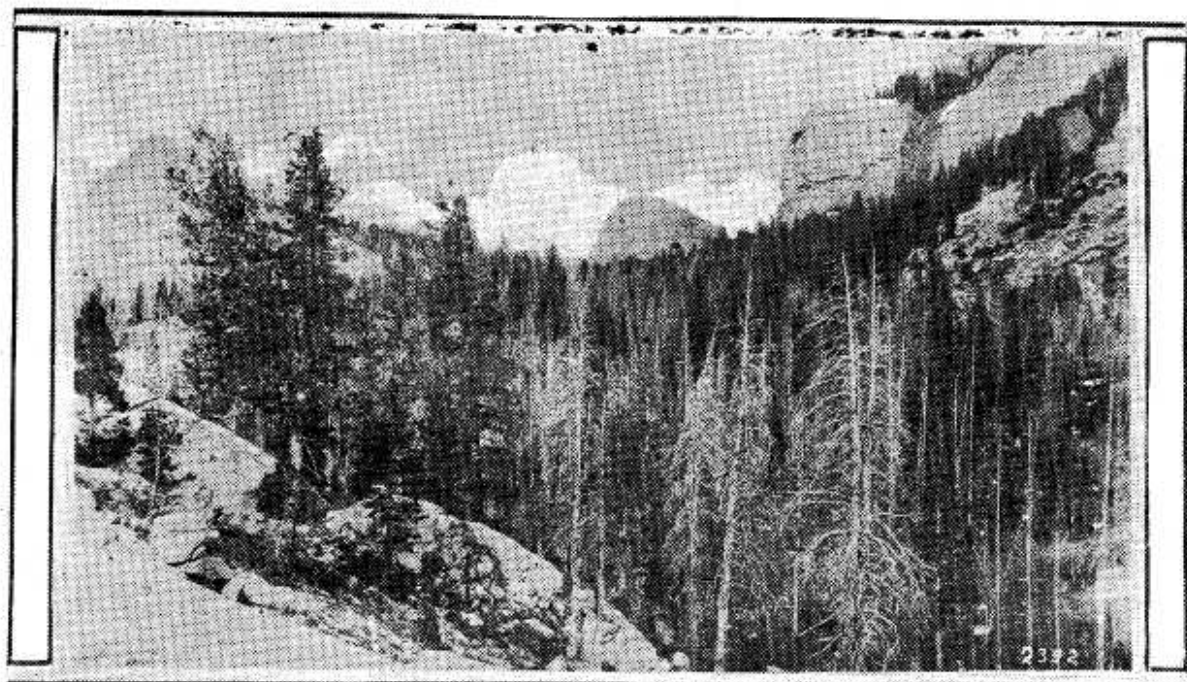
I came on down to Lake Tenaya and stopped at the lower end of the lake for about an hour. Here I found a large number of trout that were dead or in a dying condition. What was the cause, I do not know, but there were literally hundreds of the fish lying about in the water-surrounded rocks at the west and south sides of the lake. Some were very sick, but most of them were dead. A California gull was eating some of the dead fish, but was careful to keep well out of my way. Many mammal tracks in the sand also pointed to a bounteous feasting on dead and dying fish by them. Fisher, coyote, bear and a smaller track, possibly mink or marten, were the tracks most in evidence.

A pair of large mule deer bucks stood across a small meadow and watched me for some time as I prowled around through the boulders at the lake shore.

At White Wolf three pine grosbeaks flew up from the roadside and disappeared into the lodge pole forest.

Literally hundreds of Cassin purple finches flitted in and out of the trees along the stream at White Wolf, and a few Townsend Solitaires were also seen.

Darkness soon began to fall, and of course the birds and mammals ceased to be noticed.



Dead Lodgepole pine in the Cathedral Creek drainage killed by the Mountain Pine beetle after defoliation by the Needle Miner.

—Photo by G. E. Patterson.

# LOGEPOLE PINE DEFOLIATION DISAPPEARING IN YOSEMITE.

By J. M. MILLER.

The lodgepole pine needleminer (*Recurvaria milleri*, Busch) has, perhaps, aroused more interest than any other forest insect pest in the Yosemite. "Needle-miner" truly describes the food habits of this tree defoliator. The larval form is so small that it feeds on the interior of the slender pine leaves, leaving the outer skin intact so that the needle becomes a hollow shell. The adult form is a tiny white moth considerably smaller than the ordinary house fly.

This insect has been in an epidemic status in the Tuolumne Watershed since 1904 and earlier and has defoliated the lodgepole pine over thousands of acres. Wherever these epidemics have occurred the lodgepole pine has been striped of its foliage every alternate year and its growth checked so that the tree either dies as a result of the defoliation or succumbs to the attack of an associated enemy, the mountain pine beetle.

Since 1922 the needleminer has almost entirely disappeared within the national park. However, the ghost-like dead forests which it helped to create will stand for many years as a reminder of its visit.

### Invasion Dates Back to 1895

The history of this particular insect is closely associated with the Yosemite. Up to the present it has never been found in epidemic form outside the boundaries of the Yosemite National Park and only in the last few years has it been reported from lodgepole pine in any other region.

The earliest reports of the dying of the lodgepole or "tamarack" pine are from stockmen who made trips into the back country. These reports indicate that there were some areas of dead and dying timber in Jack Main canyon and other northern tributaries of the Tuolumne watershed as early as 1895 and 1896. In 1904, Dr. J. H. Comstock of Cornell University, one of the leading entomologists of the country, made a tourist trip through the Tuolumne river watershed. He reported that the lodgepole pine was being defoliated by a needleminer, but did not secure specimens of the insect. This can be more easily understood when we consider that the needleminer goes through a two-year life cycle and that the flight of the

adult moths occur only every alternate year, as in 1903, 1905, 1907, etc. Only immature larvae could have been found during the season of 1904.

Following up Dr. Comstock's report, the Federal Bureau of Entomology sent H. E. Burke to the Yosemite in 1906 to make a study of forest insect conditions in the national park. Mr. Burke made a pack horse trip along the Tioga road, but failed to find any evidence of the needleminer in the Tenaya basin or the Tuolumne Meadows. Evidence secured later, however, indicated that the insect was abundant that season in the Virginia canyon and areas to the north.

### The Moth Flight of 1913

No further study was made of the situation until 1911 when Dr. E. P. Meinecke of the Bureau of Plant Industry passed through the Tuolumne Meadows and his report shows that by that time the insect had become thoroughly established in the Tenaya Basin and the lower Tuolumne Meadows. In October, 1912, the writer was sent into the Tuolumne Meadows by the Bureau of Entomology to secure available specimens and evidence of the defoliator. At that time the immature larvae had completed one season's feeding and, as a result, the entire lodgepole forests about Tenaya lake, Cathedral creek and from Glen Aulin to the Soda Springs at Tuolumne Meadows, presented a brownish appearance as though scorched by fire. In early summer of 1913 the affected needles dropped from the trees, causing a severe defoliation. By the latter part of July the moths were in flight. It was from specimens of the adult form collected during the season of 1913 and forwarded to Washington, D. C., that the insect was first determined as a species new to science and later described by Mr. Busch.

The flight of the moths during the season of 1913 was worthy of note. The height of the flight period occurred during the last week of July and first week in August. In actual numbers the moths can only be compared to mosquitoes which follow the disappearance of the snow on the Sierra meadows. Throughout the daylight hours the air was filled with myriads of the little white moths. They were a

veritable pest to the tourist, mixing into the culinary operations in camp and adding to his discomforts on the trail.

#### Detailed Study Began in 1916

In 1916 the bureau started a detailed study of the life history, habits and possibilities of control of this insect. This work was carried on during 1917, 1918 and 1919 by J. E. Patterson, whose paper published in the Journal of Agricultural Research, covers the results of these investigations.

The needleminer spread but slowly from the areas in which it was found to be established in 1911 and 1912. The only perceptible advance was a slow drift to the westward. It crossed the divide between Tenaya lake and Snow creek and became established at Snow flat, Porcupine flat and Ten Mile meadows. During the flight season of 1917 it crossed the Tenaya canyon and became established on the Merced drainage in a small tract of lodgepole pine between Half Dome and Clouds Rest. However, this point marked its furthest advance toward the lodgepole forests of the Little Yosemite and Merced canyon, and with the recent dying out of the infestation this timber is apparently safe from defoliation for the present.

Entomologists have been expecting the subsidence of the needleminer epidemic for some years due to the presence of parasites which as a rule are effective in time in

controlling the abundance of native lepidopterous insects. It was determined that the infestation died out in Virginia canyon about 1911 and has not appeared there since. The decline in the Tuolumne meadows and Tenaya regions has been much slower in arriving than was expected. The first indications of a decline were observed in 1922 when it was found that the insect had failed to spread into new areas during the 1921 flight and that the abundance of the larvae was appreciably reduced. The 1923 flight of the moths was considerably reduced over that of 1921. During the trip which has just been made during the latter part of July, 1925, I had considerable difficulty in finding specimens. Not more than a dozen moths were seen in flight throughout the entire region.

One encouraging feature of the present situation is that with the dying out of the epidemic in its recent centers, there has been no evidence of an outbreak occurring anywhere else within the boundaries of the park. It can now be expected that this season will mark the end of the outbreak which has been running for the past fifteen or twenty years. The probability of a return of the epidemic in the future is a matter which cannot be safely predicted at present. Let us hope at least that this will be the last visit of the needleminer to the Yosemite lodgepole areas for many years to come.

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## YOSEMITE NATURE NOTES

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Communications should be addressed to C.P. Russell, Park Naturalist, Yosemite National Park.



## AFIELD WITH THE NATURE GUIDES

### Sierra Nevada Range A Single Mountain

The whole Sierra Nevada range, extending for more than 400 miles roughly parallel to the eastern boundary of California, is geologically but a single mountain. It is a single block of the earth's crust—a block 400 miles long and 80 miles wide—that has been tipped up at the eastern edge. The western edge lies buried beneath the alluvial sediments of the San Joaquin and Sacramento Valleys, and the elevated eastern edge is represented by the crest of the Sierra Nevada from the Mount Whitney region in the south to the Mount Lassen district in the north.

A good simple account of the successive uplifts that finally raised the Sierra Nevada some 13,000 feet in the Yosemite region will be found in the admirable geological resume, "The Story of Yosemite Valley," written by Francois E. Matthews and recently printed on the back of the Yosemite Valley special sheet. This map may be obtained from the United States Geological Survey for 10 cents.—A. F. Hall.



### The "Picket Pin"

Hikers in the high country cannot fail to be interested in the cheerful, loud, clear whistling that greets them as they enter the high mountain meadows. A little looking about discloses the identity of the whistler. Probably the first view of him will be had as he sits erect on his haunches very much like a miniature prairie-dog. In fact, he is known to some mountaineers as "prairie-dog." Careful watching will lead to the discovery that he scurries about through the grass, his short legs keeping him close to the ground so that he is inconspicuous as he moves. His short tail is held out behind him as is the habit of most ground squirrels. When he sits erect for a look around, he folds his forelegs close to his body and looks for all the world like a stake driven into the ground. This resemblance has given him the name "picket-pin." This mammal of the high country is now at Tuolumne Meadows, Snow Flat and in all of the meadows on the passes crossed by numerous trails and the Tioga road.—C. P. Russell.



### A WESTERN GOSHAWK SCATTERS YOSEMITE'S BAND- TAIL PIGEON COLONY

When coming by the Zoo near the U. S. N. P. S. barns on Monday afternoon, September 14, I was startled by a wild flapping and a general exodus of a large group of Band-tailed Pigeons from the corral.

Two pigeons went by me like streaks and immediately in their wake came another big blue bird,

traveling at about the same rate of speed. One pigeon dashed through a black oak tree, but the other continued straight ahead down under the oaks. Suddenly the big hawk behind put on a terrific burst of speed that carried it head-on into the pigeon amid a cloud of feathers.

The pigeon was knocked to the ground and immediately pounced upon by the hawk, which proved to be an adult Western Goshawk.

As I approached he picked up the pigeon and flew easily away toward Yosemite creek.—D. D. McLean.



### PEREGOY AND BRIDAL- VEIL MEADOWS

Several trips have been made lately to Bridalveil and Peregoy Meadows after material for the museum collection.

Birds are scarce at this time of year, due to the fall molt. Apparently they have either hidden away or gone to other sections that are more secluded.

Black and white-throated Swifts were seen on several occasions flying over in company with numerous groups of violet-green Swallows.

A mixed flock of Western and Mountain Bluebirds were hovering over Peregoy Meadows practically all the time in quest of small insects. A Nevada Savanna Sparrow was working in the tall grass along the edge of the stream that flows through meadows. Hundreds of Sierra Juncos and Chipping Sparrows were flitting about the edges of both meadows with scattering groups of Cassin Purple Finches.

A great Grey Owl was seen in the dark fir woods between the two meadows. Several Sierra Chickarees called my attention to the presence of the owl by their alarm notes.

One Clark Nutcracker flew over Bridalveil Meadows and stopped for a few moments on the top of a large fir above the road.

Chipmunks were fairly common throughout the Lodge Pole forest in company with scattering individuals of Golden-mantled Ground Squirrels. The burrows of the latter species were found to be located mainly along the road, rather than in the forest itself.

Mountain Beaver work was found at one point just below Peregoy Meadows, their tracks showing in the narrow trails leading from their burrows under fallen tree tops to the stream.

Meadow mice were at work gathering "hay" throughout both meadows.

No Woodpeckers were seen at all although quantities of drilling had been done previously on many of the Lodge Poles around the meadows.

In the spring and early summer one should find birds and mammals very numerous in this section.—D. D. McLean.

## WHAT YOSEMITE'S EDUCATIONAL PROGRAM PURPORTS TO DO

1. It seeks to stimulate use of the recreational resources of Yosemite National Park through the encouragement of a knowledge of natural history.
2. It teaches natural history but it does not overlook the fact that "to be nature-minded is more important than to be nature-wise".
3. It reaches beyond Yosemite and beyond the National Park Service in its accomplishments, for popular education in natural history affords a foundation to the intelligent administration of all natural resources.
4. It assists the park visitor in appreciating the wonders preserved for him in Yosemite and in appreciating the value of all out-door recreation. It makes him "want to know" and prepares him to more fully enjoy his park possessions.

## THE YOSEMITE NATURAL HISTORY ASSOCIATION ITS PURPOSES

1. To gather and disseminate information on the wild-life of the Sierras.
2. To develop and enlarge the Yosemite Museum (in co-operation with the National Park Service) and to establish subsidiary units, such as the Glacier Point lookout and branches of similar nature.
3. To promote the educational work of the Yosemite Nature Guide Service.
4. To publish (in co-operation with the U. S. National Park Service) "Yosemite Nature Notes".
5. To study living conditions, past and present, of the Indians of the Yosemite region.
6. To maintain in Yosemite Valley a library of historical, scientific, and popular interest.
7. To further scientific investigation along lines of greatest popular interest and to publish, from time to time, bulletins of non-technical nature.
8. To strictly limit the activities of the association to purposes which shall be scientific and educational, in order that the organization shall not be operated for profit.

### MAY WE SEND YOU EACH ISSUE OF YOSEMITE NATURE NOTES?

Your check for \$2.00 sent to the Park Naturalist, Yosemite National Park, will help to pay the cost of its publication for one year and make you a member of the Yosemite Natural History Association for the same period.

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### FROM THE NATIONAL CONFERENCE ON OUT-DOOR RECREATION

Called by PRESIDENT COOLIDGE

"THAT THE CONFERENCE ENDORSE NATURE STUDY IN SCHOOLS AND THE EXTENSION OF THE NATURE STUDY IDEA TO EVERY AMERICAN SCHOOL AND FAMILY; . . . . THAT THE ESTABLISHMENT OF MUSEUMS OF NATURAL HISTORY IN NATIONAL PARKS WILL INCREASE THE EDUCATIONAL RECREATIONAL VALUE OF THE PARKS".—Resolution of the Conference.

115,000 Yosemite visitors  
made use of the  
Nature Guide Service  
during summer of 1925.



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Dan Anderson