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NATIONAL PARK SERVICE
YOSEMITE NATIONAL PARK

YOSEMITE NATURE NOTES

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Yosemite Nature Guide Service C. P. Russell, Park Naturalist

This is one of a series of bulletins issued from time to time for the information of those interested in the natural history and scientific features of the park and the educational opportunities the park affords for the study of these subjects.

Utilization of these bulletins by those receiving them to the end that the information contained therein might be as extensively distributed as possible will be appreciated.

W. B. Lewis, Superintendent

NEW MUSEUM FOR YOSEMITE

The LAURA SPELMAN ROCKEFELLER MEMORIAL FOUNDATION has donated $75,500 for the construction, equipment, and maintenance of a museum in Yosemite. The valuable collections exhibited in the present building will be viewed by 1925 visitors in an adequate, fireproof building. A lecture room in the new structure will provide seating capacity for the crowds that gather to hear the non-technical lectures on the "Story of Yosemite". In addition to these popular geology talks, the Nature Guide Service will schedule lectures on other phases of Yosemite natural history. These museum lectures will not replace the present camp-fire talks and lectures given at the resorts, but will add to the lecture program as scheduled at the present time.

To many citizens the Yosemite Nature Guide Service has already become known as "Yosemite's Trail School". With the splendid possibilities presented by the new building and its facilities, it becomes apparent that the "Trail School" shall become a substantial institution with wide recognition. There are scientists and educators now on the staff who are recognized as leaders in their profession. They are pioneers in the nature guide movement. With Municipal

Camps, Boy Scout Organizations, Camp Fire Girls, Girls Reserves, City School Systems, Chambers of Commerce, Civic Clubs, etc., calling for qualified nature guides, it is a satisfaction to know that Yosemite, the origin of American nature guides, may become the training school for leaders in the nature guide movement, which is steadily gaining impetus. Plans looking toward the establishment of a permanent Nature Guide Training School are now being formulated by the Yosemite Nature Guide Service.

"BUG KILLED" FORESTS

By John M. Miller, Forest Insect Investigations, Bureau of Entomology

Along with the varied insect fauna to be found within the Yosemite are several species which have been blacklisted by the forester because of their tree-killing propensities. A record of the extent to which these insects may affect the forest cover can be seen in the dead forests of lodgepole pine in the higher country of the park. One of the largest areas of "bug-killed" forest in California exists in the upper watersheds of the Tuolumne River and Tenaya Creek. Between Tenaya Lake and the Tuolumne Meadows the Tioga Road passes through a part of this area where almost all mature lodgepole pine trees have been killed but are still standing as ghostly reminders of the former green forest. The origin of this graveyard of dead trees dates back at least forty years. Archie Leonard, a pioneer ranger of the Park Service, stated that he first noted the dead lodgepole in considerable quantity in Jack Main Canyon during the eighties. From this point the trouble seems to have spread slowly throughout the entire Tuolumne River watershed and has resulted in the death of most of the lodgepole pine in the Tenaya basin.

Two insects are jointly involved in the death of this timber: one of them a defoliator (leaf killer), the other a barkbeetle. The defoliator is known as the lodgepole pine needle borer (Recurvaria milleri, Busck), while the barkbeetle is the mountain pine beetle (Dendroctonus monticolae, Hopk.). The needle borer is of special significance to the Yosemite, as the species was first discovered in this park, and as yet has never been found to cause any appreciable damage to lodgepole pine in any other locality. Only within the last two years has there been any indication that the epidemic, which has been slowly spreading toward the lodgepole pine of the Merced Canyon, is on the wane from natural causes.

In addition to killing lodgepole pine, insects have taken a toll from the valley floor of the large mature yellow pine. Many of the old veteran trees which framed the vistas from the valley floor when it was first visited by white men are gone. These have been killed, a few trees each year, by another species of barkbeetle, the western pine beetle (Dendroctous brevicomis, Leo.). Some years ago these trees were dying at the rate of 25 to 50 large trees each year, but persistent persecution of the beetles by control methods employed by the Park Service has very materially reduced this loss until today the forests of the valley floor are as free from insect damage as it is possible to expect.

Along the Wawona Road and the western areas of the park, the mountain pine beetle is a persistent menace to the sugar pine and has killed many of the finest trees. Still another species of barkbeetle infests the Jeffrey Pine, which is common around the rim of the valley.

These tree species of barkbeetles and the needleborer include the most destructive forest insects of the park. Following in the wake of these tree-killers is a host of secondary insects which feed upon the tree after it has been killed.

Something about the methods by which these tiny tree killers are able to overcome the life processes of a giant tree will be taken up in future "Nature Notes".

VIOLET-GREEN SWALLOWS

On the morning of June 30, 1924, nesting Violet-green Swallows were discovered in Yosemite Valley. The nest site was in an old woodpecker hole in an immense dead and barkless yellow pine. This stump stood on the bank of the river about two miles below the village, and in it were at least seven old woodpecker holes. In one of these holes were three fully feathered young birds about ready to leave the nest.

On the following day we again visited the swallows. Two of the young birds had left the nest, and the one remaining bird was poking his head far out of the doorway and eagerly calling for food. We saw this bird receive food several times, and while we were watching, it was discovered that two other old woodpecker holes contained young swallows. The swallows in the upper compartments were much younger birds. When the parent birds came with food, small squaling voices could be heard, but nothing could be seen of the young. Evidently the young were still too helpless to come to the entrance of the nest-hole or to meet their parents halfway.

The lowest nest-hole occupied by the swallows was about ten feet above the ground. The parent birds were bold and did not hesitate to feed the young even when we stood directly below the nest. As the old birds clung to the edge of the nest-hole while feeding the young, we had a fine view of their glorious violet-green backs. Such glinting, sheening colors! Such irridescence! No bird in all the valley is more exquisitely garbed. No bird better exemplifies the poetry of motion. The Violet--green swallow is a true poet in both color and motion.

AN ALBINO GROSBEAK

The first report came from a woman who asked about a pure white bird seen drinking across the river from Camp 7. From the description given the nature guide was sure that the bird seen must have been an albino. Then came Mr. Gilbo with a description that tallied with the first one, and a trip to Camp 16 revealed the unusual bird. The usual call note of the Black-headed Grosbeak drew attention to a white bird high in a tree, and there is was - a Black-headed Grosbeak nearly pure white with just a tinge of yellowish color on the wings and a little darker on the head, size and shape of bill characteristic. To the nature guide comes a mental picture of albino robin, blackbird, crow, and chickadee observed in various places in the state, and to this was added that of an albino Black-headed Grosbeak.

TELLING YOSEMITE'S STORY

No. 9 - Polished Glacial Pavements.

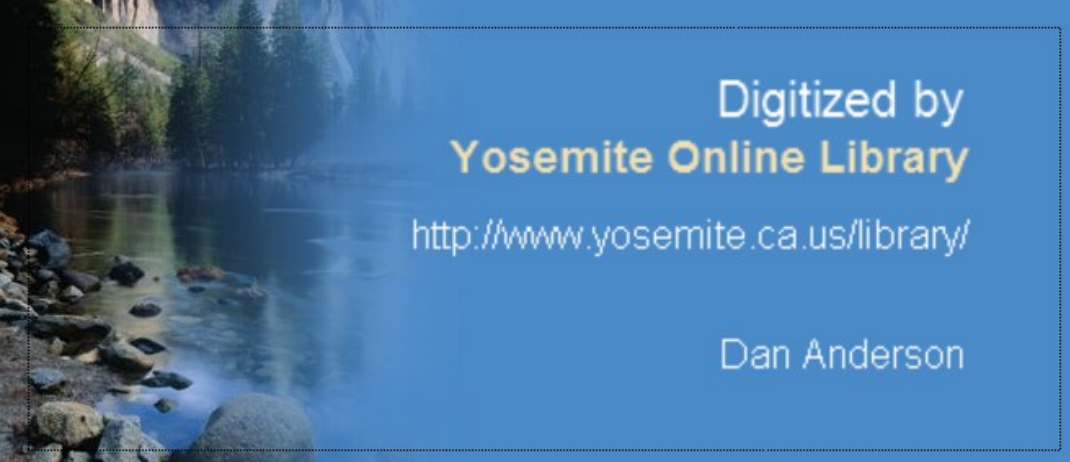
Of the varied evidences of glaciation within the park, the most striking and attractive to travelers are the beautiful polished pavements. Recently the writer escorted a nature guide party into the High Sierra and onto acres of this smooth, undulating granite, over which the ancient glaciers flowed. On stepping out onto the first shining expanse, one heard exclamatory "Ohs!" and "Ahs!" from every mouth. One city dweller, more articulate than the rest, summed up his unpoetic impressions with oft repeated "Market Street". John Muir has described the pavements as "unlike any part of the loose earthy lowlands where people dwell and earn their bread", and it is a little disturbing to discover that some may associate the sordid rush of a city street with the imperturbable beauty of these high, open spaces that for 20,000 years have remained unchanged.

In the region of Yosemite Valley the structure of the granite is such that none of the polish has resisted the corroding effect of the weather. Two thousand feet above the valley, at the lower end of Little Yosemite, patches of the more resistant rock yet maintain the enamel-like surface. Along the Merced Lake Trail at an altitude of 8,000 feet, areas acres in extent arrest the hikers' attention, and throughout the Yosemite between 8,000 and 9,000 feet altitude this brilliant, gleaming polish awakens the wonder and admiration of every lover of the high trails. At Lake Tenaya the pavements may be seen at their best. The Indians were so impressed with their mysterious beauty that they named the lake PY-WE-ACK, the Lake of the Shining Rocks

The pressure exerted by the ice in producing the polish must have been tremendous. It has been estimated that this pressure was more than a hundred tons to the square foot. In that region around Tuolumne Meadows, where the type of rock known as Cathedral Granite abounds, the planing action of the ice has produced remarkable mosaics. Large feldspar crystals make up a large part of Cathedral Granite. The glacier planed down granite, crystals, and quartz alike, revealing remarkable patterns. In places the smooth undulating granite surfaces are marked with deep grooves or striae, cut by the moving boulders that were frozen into the river of ice and brought in contact with the surfaces below.

Erratic boulders are seen scattered in profusion over the glacial pavements or nicely poised on the rounded summits of the ice-carved domes of the high country. They had their origin in peaks of the Sierra crest and rode to their present locations on the ice flood. As the ice withered in the changing climate, they slowly settled into the disintegrating mass and found resting places where we now see them.

At Lyell Glacier the slow business of applying an enamel-like finish on granite is now going on. It is of course impossible to witness the actual abraiding of rock by ice, but the little flood of milky water which pours from under the moraine at the snout of the glacier is proof sufficient. Examination of the cloudy water reveals the fact that it is so discolored because of the very fine "glacial flour" that it contains - granite ground to finest dust by the most powerful "mill stones" existent.



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Dan Anderson