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Yosemite Junior Nature School Notes

By REYNOLD E. CARLSON
Ranger-Naturalist

The program of the Yosemite Junior Nature School is an attempt to provide for children the activities that will lead to a better understanding and appreciation of the natural history of the Yosemite region. The gospel of conservation when brought to children should pay better dividends than when brought to adults.

Each year since its inception there has been an increase in the variety of activities offered and in the number of children availing themselves of the opportunities of the school. During the summer of 1935 there was an average daily attendance of 92 in the regular sessions of the school. In addition to the regular groups there were held seven afternoon leadership training sessions, two evening campfires for high school students, and one day hike for older children. During this summer's school there were more older children participating

than during any past session of the school.

Probably the most valuable asset of the school has been the development of a group of volunteer leaders who have come up through the work of the school. A comprehensive training and testing system was devised and during the past two years 18 students have successfully passed the tests and been given responsibility for the passing of younger children.

Twice during the course of the summer a small mimeographed nature note magazine was issued. All of the articles were written by members of the school. Three of the best of the articles follow and are presented as written except for corrections in English.

A DAY WITH A BEAR

Erwin Freeburn, 17, Exeter, Calif.

One of the requirements for a mastery award in zoology in the Yo-

semiter Junior Nature School is to make a personal observation of some animal. For my observation I chose a bear, observing him for eight hours on July 25, 1935.

I found a bear at eight o'clock in the morning beside the road very near the bear pits. He was the only bear in sight, so I followed him.



This bear was about three years old and brown in color. He was not very large but he wasn't afraid of the larger bears.

The bear stayed near the road until 8:15. He then wandered off down the road. At 8:30 he found a coffee berry patch, where he ate some of the berries. He pulled the berry bushes down with his front feet and stripped the berries off with his teeth.

He tried to eat some manzanita berries but did not find any on the bush of manzanita.

At 8:46 he roamed into a very

dense grove of young yellow pines. I had a hard time following him through this grove until I started playing bear too. I got down and crawled along after him. All of a sudden something made a noise off in the woods. My bear was frightened and ran about 100 yards. He then started back to see what had made the noise. It happened to be another large, black bear, which looked at me for about one minute. Then he jumped about two inches; I jumped six feet. The two bears looked at each other, grunted and went their way.

At nine o'clock the bear entered the meadow west of the bear pits, where he scared up a grouse. This was the first time I had ever seen a grouse on the valley floor. The bear went into a grove of yellow pines and went to sleep on the ground at 9:12. He slept until 10:03. By 10:10 he was digging into an old log for something, perhaps worms. Whatever he was looking for, he at least found something to eat.

At 10:29 he went to the river, got a drink, and went for a swim. First he sat down in the water, and then he made a jump into the deep water. He splashed the water with his paws. There was a log in the river where he lay down on his back and scratched his back.

He came out of the river at 10:40 and went for a run through the woods. He must have heard the dinner bell, for he ran straight back

to the feeding ground, and I had all I could do to keep up with him. There was a large crowd waiting for him. From 10:46 to 11:40 the people fed him. When he started his wandering again at 11:56 he ate some more coffee berries. At 12:10 he climbed a black oak tree, where he seemed to be hunting acorns. He came down at 12:30, just to climb another black oak tree at 12:38. This oak was larger, so he went to sleep, and so did I. We slept until 2:02, when he went back to the feeding station, where he stayed until 2:46.

Off he headed toward the river, and by 2:59 he was in the river again. By 3:00 he was across the river,—and I, not ready to swim, lost him.

From 3:00 to 3:25 I do not know what happened to my bear. I found him at 3:55 along the roadside on the other side of the river. He stayed there until 4:00. At 3:37 he took my bag of peanuts. I rescued the bag, but he got some of them. I let him at 4:00, still eating some of the peanuts which he spilled.

This bear seemed to be always hunting for food.

JOE MULLIGAN, AN OLD STAGE COACH DRIVER

(as my grandfather told it)

(Peggy Degnan, age 14, Yosemite)

Joe Mulligan was the best driver of six horses and Concord Coach that ever entered Yosemite.

He named his horses and they knew their names; one word from

him was enough. The 24-foot whip-lash did the rest. His leaders knew how to make the many turns and zig-zags on the Oak Flat road. His wheelers right under the footboards would carry the stage-coach round at his command. If any of those six horses disobeyed orders, they knew what was coming (the whip).

Joe drove from Copperopolis through Chinese Camp, Groveland, into Yosemite. Such people as Governor Bartlett, Stoneman, etc., rode with him, and he was Galen Clark's favorite. They were afraid to trust anyone else.

Joe Mulligan never had any accidents during his stage-driving career and at all times would have an ample supply of John Jamison, just enough to avoid any accident and to know what he was doing and to talk sense to his horses.

Good luck to Mulligan, wherever he is, and if dead a little prayer won't hurt.

A TRAGEDY OF NATURE

(Glenn Gallison, age 12, Yosemite)

One day last winter when I was out hunting for deer antlers on the hill in back of my house, I saw a forked-horned buck lying down. When I walked near him, he did not get up, as I had expected him to. When I got quite close to him he got up and stood still for a moment; then he swayed and fell. After that I knew he was sick.

That night I heard coyotes howling.

The next morning I went to the place where I had seen the buck. The coyotes had evidently killed the buck.

Sitting on the deer was a golden eagle. He had been eating the best flesh of the buck.



Lewisia kelloggii

by Ranger-Naturalist Enid Michael

On July 4, 1909, Mr. Michael and I found *Lewisia kelloggii* blooming profusely on the sand flats at the summit of El Capitan, in the Yosemite National Park. The large crinkly white blossoms, an inch and a half across and almost stemless, spread their petals low to the ground. Land lillies they appeared to be, afloat on pools of granite sand.

When next we visited the haunt of *Lewisia kelloggii*, on July 4, 1921, we found flowering plants still numerous, but also we found that the colony of *Lewisia* was suffering great loss through the depredations of some sort of mammal. Perhaps 50 percent of the plants had been

dug up and the roots consumed. In place of plants in bloom there were pits in the granite sand and a scattering of withered leaves.

In the summer of 1934 not a single *Lewisia* plant was to be found, but we did find a dozen or so pits to mark the spots where plants had been uprooted. This year (July 4, 1935) a thorough search of the sand flats of El Capitan disclosed the remains of five plants, each marked by a pit and a few withered leaves.

Observations over a period of 25 years would seem to indicate that the rare and lovely *Lewisia kelloggii* is in grave danger of extermination in Yosemite National Park.



YOSEMITE TREES

New Species of Juniper for Park

By Emil F. Ernst, Assistant Forester

Within the present 1,176 square miles of Yosemite National Park there are now two species of Juniper to be found. Until this August only one species, the Sierra Juniper (*Juniperus occidentalis* Hook) was known to exist in the park, although other species were known to approach the park boundaries. The Sierra Juniper is common in the park at elevations above 7,000 feet. It is a rather common tree of the Tuolumne Meadows and Tenaya Lake regions on the Tioga road, being found on the exposed rocky slopes so characteristically beautiful and pleasing to the visitor.

On August 20, 1935, William Augustine, assistant forester, and his assistant, Elliott Sawyer, while working on the type mapping project which will cover the entire park, found specimens of Dwarf Juniper, (*Juniperus communis* V. *Montana* Ait.) on the ridge between Spiller and Return creeks in the northeast

part of the park. The specimens were discovered during a torrential rainstorm between the now-called Virginia Peak and Spiller Lake. These places range in elevation from 10,500 and 11,300 feet above sea level. True to its name, the Dwarf Juniper in this region seldom gets up to one foot in height. In California the species is a prostrate plant and is more often considered as a brush plant than the tree it happens to be. Because of this prostrate character and its scarcity in the remote locality of its discovery its presence has heretofore not been realized by the few hardy individuals who have traversed this area. Patches approximately one-tenth acre in size were found at the headwaters of Return Creek, while in the Spiller Lake area smaller individual clusters were seen. Where this tree was found it may be considered as an associate of the White-bark Pine, which also becomes pros-

trate at high altitudes. The species was verified by Assistant Forester Emil Ernst upon its delivery at the Branch of Forestry.

This species is found around the world in the North Temperate Zone. It attains its greatest height in the State of Illinois where it sometimes naturally reach a height of 25 feet.

In the Sierra Nevada, where it is rare, it is seldom over one foot in height and is to be found usually at elevations between 8,000 and 9,500 feet above sea level. The nearest known specimens of the same species are on the east slopes of Mt. Conness, one of the mountains on the east boundary of the park. Our specimens are therefore out of the normal range of elevation and location for as a rule in the Sierra Nevada it is found on the eastern slope facing the desert. It has been reported as far south as Mono Pass, which is also on the east boundary of Yosemite National Park. It ranges north from this pass to the vicinity of Mt. Shasta, where it swings west to Del Norte county, and then north again to the Arctic regions.

This species of Juniper is easily distinguished from all other Junipers by the character of the leaves. They are keenly-pointed, needle-like, or narrow lance-shaped, spread widely, and occur in groups of three at rather regular intervals on the triangular branchlets. They adhere for periods of five or six years. Close examination will show easily the

difference between them and the more spray-like leaves of the other Junipers. The fruit (berries) mature by the end of the second summer at which time they are dark blue, almost black in fact. A whitish bloom covers the entire fruit. According to Sudworth the fruit contains two to three, or sometimes one, hard bony seeds while the soft flesh is dry, sweet, resinous-aromatic and readily eaten by birds and some small mammals. The fruit may sometimes remain on the tree until the following spring.

The tree is too small to be commercially valuable, but its wood is decidedly durable. It is supposed to be long-lived. Small trees from two to four inches in diameter show ages of 25 to 33 years. It is important to foresters because it forms a low matted ground cover in high exposed places building up the soil and retarding excessive erosion. Areas covered by this type of ground cover are the sources of our sweet flowing mountain streams which are a delight to fish and the most important element in the highly developed irrigation systems of the State of California.

* * *

The fifth annual glacier measuring expedition under the auspices of the Yosemite Naturalist Department has just returned from a ten days study of the glaciers of Mt. Lyell, Mt. Maclure, Mt. Dana, and Conness. A resume of the findings will appear in the December issue.

* * *

Water Dogs Eat Trout Eggs

By A. E. Borell

Reprint from California Fish and Game)

Last spring Park Ranger Otto Brown reported that on April 26, he found water dogs (Pacific Coast newts) in Laurel Lake which were eating trout eggs. He stated that three water dogs which he examined contained 39, 32 and 25 eggs respectively. To me this was new information on the food habits of the water dog. Therefore, on May 10, 1934, I made a trip to Laurel Lake to gather more data on the subject.

At the southern end of the lake is a shallow outlet with a sandy bottom, which the rainbow trout use as a spawning ground. Drift logs and other debris had collected in the outlet affording shelter for the trout and also for the water dogs. At the mouth of the outlet the water flows slowly. On the day of my visit, there were three or four water dogs in sight most of the time. They walked slowly about the bottom thrusting their heads into the sand and litter, obviously foraging. Every few minutes the salamanders would come to the surface to breathe, but returned at once to their foraging. When frightened, they swam to refuge beneath the logs.

Thirteen water dogs (*Triturus torosus*) were captured between 10 a. m. and 3 p. m. Eleven were placed in alcohol and two kept alive. At

the Yosemite Museum the preserved ones were opened and the stomach contents examined. The following table gives the results of this examination, which would indicate that the food of water dogs in Laurel Lake at this time of the year consists mainly of caddis-fly larvae and trout eggs.

Specimens	Trout eggs	Caddis-fly larvae	Small crustaceans	Minute snails	Small clams	Various water insects	
1	0	9	3	2	0	1	
2	3	8	0	0	1	0	
3	0	4	0	0	0	0	
4	15	2	0	0	0	0	
5	0	10	6	2	0	0	
6	7	5	6	0	0	0	
7	4	6	0	0	0	1	
8	18	0	0	0	0	0	
9	11	3	0	0	0	1	
10	0	5	4	1	1	1	
11	13	4	2	0	0	2	
Total	11	71	56	21	5	2	6

Due to the mild winter rainbow trout spawned early that spring. At Laurel Lake on May 10, most of the trout were through spawning. This may account for the larger numbers of eggs found in salamanders on April 26 by Otto Brown.

It must be remembered that water dogs live in moist places most of

the year, but in the spring they seek the quiet, shallow water, where they breed and deposit their eggs. Unfortunately, the spawning season of the water dog in this region compares more or less with the spawning season of the rainbow trout. There are rarely, if ever, any salamanders in the water in the fall during the spawning season of the Loch Leven and Eastern Brook trout.

I have kept two of the water dogs in captivity for some time and tried to feed them on trout eggs so as to determine the number of eggs which they might consume. They were placed in a large aquarium which had sand at one end and water at the other. The eggs were placed in

the shallow water. Although the salamanders seemed to be content in the water before capture, they left the water when placed in the aquarium and spent most of their time on the sand and refused to eat any of the eggs.

Much more study will be necessary to determine the extent of destruction to trout eggs by water dogs. In this connection, there is one point which should be mentioned. Some caddis-fly larvae are herbivorous and other are carnivorous and possibly eat trout eggs. If caddis-fly larvae do eat trout eggs the water dogs may do as much good as harm, because of the numbers of caddis-fly which they eat on the spawning ground.

Naturalist Staff Notes

New Jr. Park Naturalist

We are pleased to announce the appointment of Mr. James E. Cole to the Jr. Park Naturalist (Museum Preparator) position left vacant by the resignation of Claude A. Wagner. Mr. Cole has served two summers in Yosemite as a Ranger-Naturalist after graduating from the Yosemite School of Field Natural History in 1933. His major at the University of California at Los Angeles was Botany. His special hobbies are Indians and Reptiles. He was chosen from a Civil Service register of college graduates in science who successfully passed the examination in Biology held nationwide October 1933.

Carl Sharsmith Moved to San Francisco

The many friends of Ranger-Naturalist Carl Sharsmith will be happy to learn that he is improving rapidly and will be on his feet again in less than a month. Carl was injured in a fall from the top of Mt. Maclure when a rock on which he was standing gave way. Until recently he has been at the Lewis Memorial Hospital in Yosemite but he is now at the Marine Hospital in San Francisco. Those who know Carl should plan on visiting him when in the Bay region.



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Dan Anderson