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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

LOW WATER KILLS FISH

Not only in Yosemite but all over the state the unusually low water in the streams is bringing death to trout. As soon as a stream ceases to flow and the water is left in pools, fish fail to get enough oxygen and smother to death, even if a kind fate saves them from starvation.

On August 3 it was necessary to rescue a number of fish from Tenaya Creek just below Mirror Lake. The water disappeared almost over night, and many fish died. To the naturalist it seemed strange that Loch Leven Trout, that thrive in the warmer, more slowly moving waters, were the first to die, whereas most of the native Rainbow Trout, lovers of cold, rushing waters, survived until rescued.

OBSERVATIONS ON NESTING WHITE-HEADED WOODPECKERS

When I arrived here on Friday, June 6th, I found a family of Northern White-headed Woodpeckers located in one of the corner posts at the front of the ranger station. The entrance hole, which was about an inch and a half in diameter, was a little more than six feet above ground. The young were evidently just hatched, for a few weak chirps were all that could be heard. The old birds brought "grub" at about ten minute intervals from daylight to dark.

After a week, it appeared that there was only one "chick" in the nest. His voice gained steadily in both volume and lasting quality, until at the end of two weeks he chirped almost constantly all day long. Figuring that he peeped once a second, which is rather too slow, in eight hours he would peep a total of 28,800 times! Quite a large amount of food would be required just to keep his vocal chords vibrating! Contrary to the custom of lumberjacks, he enjoyed making the most noise when he was eating.

At first, pictures were possible only with a tripping device, but during the last four or five days before the young one took flight, I could stand within three feet of the hole, and have the old birds come right down and feed him. They would be rather apprehensive at first, but as soon as the "chick" heard the sweep of wings, he would stick his head out and set up such a howl that they disregarded everything else and came down to feed him.

During this latter period, his voice started to change. Every few minutes the chirping would give way to the characteristic staccato of the mature bird. He also began to exercise his bill on the inside of the post. If a pencil or finger were held to the opening, he would immediately attack. All these were signs that he would soon be leaving, and I was not surprised when on the morning of the 27th I found the nest vacant.--William M. Harlow, Ranger at Aspen Valley.

AN INTERESTING BEHAVIOR OF PINE CONES:

At this season of the year in Yosemite the cones of many of our cone-bearing trees offer extremely interesting objects of study and observation. On a number of our pines one may find cones of three ages: those which matured and dropped their seeds in 1923, those which will mature in 1924, and those which will reach maturity in the fall of 1925. The last mentioned cones all point upward. This position is the one most likely to insure pollination. Some of the pollen, carried by the wind, lodges between the scales of the cone, and later fertilization takes place. After fertilization the further growth of the cone results in its turning downward and becoming pendent. This behavior of the cone is due to the influence of gravity. Just how it is that gravity produces this result is not known, but it is definitely established that in some way the effect of gravity is to cause the young cone to remain pointing upward until after fertilization takes place, and then the effect of gravity is to make the cone turn downward.

AH-WI-YAH!

Ah-wi-yah or "Quiet Water" is much more musical than the white man's version "Mirror Lake". The word mirror is much in keeping with the chewing gum tokens and the paper trail of the kodak that fringes the lake. We need simplicity, quietness, and the natural in our language and life.

It is the quietness of the lake that enables us to see the reflection of Clouds' Rest. To see over a mile of granite ledge reflected in a small sheet of water is sufficient cause for musing. It is not until midday that the image is brushed away by the gentle, canyon breeze, which ripples the surface. And this may give cause for further meditation.

Our reverie may take us back to the beginning of the lake. It was born long after the Glacier had scoured out the U-shaped walls of Tenaya Gorge. Geologists tell us that about three hundred years ago a severe earthquake shook the loose material from the walls of the cliffs of this region, forming the major part of our talus slopes. It is possible that during such a disturbance the gravel debris was thrown across Tenaya Creek to form Ah-wi-yah.

Ah-wi-yah was no sooner born than the creek set in to destroy it. Granite born soil, sand from the quartz, and clay from the feldspar, were dropped into the lake. As the deposits accumulated, the vegetation began to march into the shallow stretches of the upper end. A close study of this conquest of the lake will probably picture the filling of the post-glacial Yosemite Lake.

Chara and burr-reed are practically the only aquatics that have found this recent lake. This is probably due to the youthfulness of the lake and to the fact that there are very few aquatic plants in the lakes of the upper Tenaya Creek.

The sand plain, which has accumulated at the entrance of the creek into the lake, is being laid down faster than the vegetation can seed it. Sorrel is in the front ranks. This plant probably did not grow on the shores of Yosemite Lake, as it is a recent weed arrival from Europe. The next plant settler is a native Artemisia, which could have been the first colonist on the ancient lake. Willow is in the front ranks of the woody battalion. Behind it in close formation are marching the lodgepole pines. In the open spaces are lupine, mint, pussy paw, and manzanita - pioneer plants of dry areas and the chaparral, which have been well trained to meet the drought conditions of this sand desert. Incense Cedar is not quite so venturesome but appears in the back ranks of the leafy cover. As soon as the willows stabilize the stream banks, the black cotton wood and the creek dogwood take up the stand, each plant preparing the way for the one in back of it. Coming down to the shores of the old lake are the black oak, yellow pines, and the firs. They have not yet ventured onto the lake plain but are evidently preparing to do so. The tree colonization is so rapid that the meadow stage is very brief.

The animals which accompany lakes are very few in Ah-wi-yah. This, too, is probably due to its youthfulness. During this season it is unusually low. Along its clay margin are autographed the tracks of the spotted sandpiper, deer which come down to drink, and summer folks. In its deeper recesses are the native rainbow trout. A few water striders walk along its surface. Taken all in all, its life is a solitary one. Not a frog to break the silence nor a turtle to sun himself upon a log.

Herein is being enacted in a short space of time the history of the Yosemite Valley. V-shaped valley, Glacier, U-shaped valley, dam, lake, meadow, shrubs, forest march in succession like a great play - the sand plain a stage, and the trees the actors. Visitors to Yosemite should go to Ah-wi-yah, for therein is breathed the spirit of the Great Valley.



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Dan Anderson