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DUCK HAWKS IN YOSEMITE VALLEY

By Ranger-Naturalist Lowell Adams

Previous to the summer of 1939 there were relatively few records of the occurrence of Duck Hawks (Falco peregrinus anatum) in the Yosemite Valley area. Grinnell and Storer (1924) report finding a feather of one of these birds near Rocky Point. Charles W. Michael observed a pair nesting near Leaning Tower in the summers of 1932 and 1933. Mr. Michael also tells me that he saw Duck Hawks in the valley on two other years—once in 1931 and again in 1935.

On June 22, 1939, I saw two Duck Hawks soaring rapidly back and forth at Yosemite Point. They continually uttered the characteristic, gull-like **kek-kek-kek**, and this cry together with the falcon-like shape of the wings and the size of the bird enabled me to identify them, with the assistance of Mr. Harwell and Mr. Michael, as Duck Hawks. I returned to Yosemite Point on July 10 and saw three of the hawks. This time I was able to catch a glimpse of the tear-drop marking on the cheek of one of the birds, thus further confirming the original identification. The size of the three birds did not seem to be equal, but I could not determine whether or not they were two adults and one young. However, the presence of three individuals led me to surmise that a pair of hawks had nested on or near Yosemite Point, and at least one off-spring had been successfully raised. The birds were not so vociferous as they had been on my previous visit, but occasionally, as they soared back and forth, two would meet in mid-air and there wheel about together for a few seconds and scream in their customary fashion. Twice I saw an individual dive. Once one dived with tremendous speed into Yosemite Valley. I was unable to follow its course after it was mottled against the south side-wall, but I believe it must have followed its bullet-like oblique course to the bottom of the canyon. The other dive was made near Glacier Point. One of the hawks left the vicinity of Castle Rocks where all three had been soaring, and soared in a straight line toward Glacier Point. When I could no longer see it with my naked eyes, I found it again with eight-power field glasses and finally saw it change its horizontal course

to a steeply oblique dive apparently toward some spot on the west side of Illilouette Valley southeast of Glacier Point. The belief that the hawks had nested was further confirmed on July 20 when Ranger-Naturalist Schwartz observed four hawks, two young and two adults, at Yosemite Point.

On July 12, as I walked to the Museum at 8 a.m. my attention was called, by a series of calls, to a Duck Hawk which was flying about 100 feet above the Administration Building in Government Center. The hawk quickly disappeared behind the oak trees to the west.

Other naturalists have reported seeing Duck Hawks this summer in and near the upper end of Yosemite Valley. Probably these reports are based upon observations of the same birds which I have reported as occurring at Yosemite Point. Park Naturalist Harwell saw one on June 24 at Snow Creek Fall in Tenaya Canyon. He has also heard them a number of times near his home at the foot of Yosemite Point. On June 28, Assistant Park Naturalist Beatty and members of the Yosemite School of Field Natural History saw the hawks at Mirror Lake. Morris Pell and George Petrides, students of ornithology from Cornell University observed a pair of Duck Hawks at Snow Creek Fall on July 8. These birds have been seen as far west as El Capitan where Elwood Wolfe, Museum Assistant, observed them circling over the cliff on July 9.

A STRUGGLE FOR EXISTENCE, SNAKE VS. FISH

By Ranger-Naturalist C. W. Schwartz

The constant struggle for existence was recently observed in a very graphic manner. At Mirror Lake on July 4, 1939, a rather large fish was seen at 9:50 a.m. thrashing about in the water. It seemed to swim along with a portion of its dorsal fin above the water, then thrash and dive. When it came closer to shore the cause for this violent thrashing was seen. A moderate sized Giant Garter Snake (Thamnophis ordinoides couchii Kennicott) was seen to have a good hold on the fish's head. The snake was pulling one way and the fish the other. Gradually the snake succeeded in pulling the fish over to the shore line and started to work its victim up onto the shore. In the meantime the fish was still struggling. The snake wrapped its tail around pieces of vegetation growing on the shore and used this support as an anchor.

Upon closer examination it was seen that the snake had hold of the fish around the ventral side of its head in such a way that the gills were closed. Apparently the fish was "drowning" from lack of oxygen because water was prevented from going through the gills. The fish, which was a sucker, was about ten

inches long, the snake at least two feet. The snake succeeded in drawing the fish's head free from the water and then held it this way for ten minutes. At 10:12 a.m. the fish which was gasping was apparently played out. At 10:20 the snake succeeded in getting the fish clear out of the water, a difficult task because the fish made a comeback and thrashed fervently. Gradually the snake kept renewing its hold on the fish's head and each time it moved its jaws nearer the anterior end of the fish so that at 10:35 it had the fish in a position so that it could be swallowed. At 11:10 the snake had succeeded in engulfing up past the fish's head I wanted to get a better photograph of this and moved them out to a brighter spot. The snake resented my intrusion and took to the water with the fish and swam several yards, still holding on to its prey. The fish was heavy enough to keep the snake submerged.

After five minutes in the water, the snake returned to the bank and I again tried to get it in a sunny spot but this time the snake let go of the fish, returned to the water and swam away. The fish was dead. Because I interfered with this struggle for existence I was unable to determine the final outcome. However, the snake was undoubtedly the winner and the fish the loser. From past observations I believe that the snake could have devoured the fish in about one and one-half hours and that it probably returned to finish its meal which I so rudely interrupted.

MELOSPIZA MELODIA NESTING IN YOSEMITE VALLEY

By Ranger-Naturalist Enid Michael

Stray Song Sparrows are likely to be seen in Yosemite Valley any time from the middle of September to the middle of April and there have been occasional years when a lone bird would spend the entire winter, but in the nineteen years from 1920 to 1938 no Song Sparrow was seen in the valley during the summer months. And there have been no nesting records for the Yosemite Valley.

May 15, 1939 two Song Sparrows were seen in the marsh near Happy Isles. Both birds were in full song. On subsequent visits to the district birds were always present and on June 27 a Song Sparrow was seen carrying food to its young in a nest. On this date three birds were in full song and so it seems probable that there were other nesting pairs. In any event one nesting pair is enough to establish a new nesting record for Yosemite Valley.

Also on two occasions singing birds were noted in the marsh above Mirror Lake, where they were never noted in other years during the months of May or June.

YOSEMITE ANIMALS

A GRAY SQUIRREL MOVES ITS HOME

By Ranger-Naturalist Ernest A. Payne

While I was unloading my car and trailer in the parking area at Camp 19 just before noon on June 11, 1939, a female California Gray Squirrel (Sciurus griseus griseus) ran past within ten feet of where I stood. Around her neck she bore an unusual ruff of gray fur which blended very well into the general color scheme of the animal's body. The squirrel ran across the clearing toward the telephone box and disappeared among the upper branches of a white fir tree. Due to my surprise at seeing the animal at such close range and the rapidity with which it ran, I was unable to determine the nature of the ruff. Soon, however, the squirrel was on the ground again but the "mantle" was missing. As I continued my work the animal again appeared, this time not more than a yard from my feet as she ran toward the same fir tree into which she had vanished on the earlier trip. This time, however, I was able to observe the ruff more clearly and could see that it was formed by the body of a baby squirrel. The mother had a firm grip on the fur of the youngster's body on the abdominal surface near the front legs. The body and tail were arched under, around, then over the back of the adult's neck forming a tight collar or ruff.

In about five minutes the mother returned to the ground but without her baby.

The attention of Mr. Charles Michael was called to the actions of the squirrel and together we followed it across the camp through a tangle of azaleas. Near the road it reached a lodgepole pine and climbed to its upper branches. My observations ended at this point but Mr. Michael stayed in the vicinity for forty-five minutes and at that time the gray squirrel had not left the tree.

This female had been observed several times by residents of Camp 19 as she went about her many duties concerned with raising a family but the male had not been seen. This absence of the male in the vicinity of the nest seems to be consistent with the observations of Vernon Bailey, Ernest Thompson

Seton, (Lives of Game Animals, Vol. 4, Part 1, pp. 42), and others who believe that the male is present only during the mating season and has no responsibility in rearing the young.

It would be interesting to know what disturbances prompted this mother to abandon a well established home and to move her half-grown young to a new location. Perhaps the steady stream of noisy automobiles which passed close to the nesting tree had undermined her sense of security in the old home. The exposed nest may not have afforded sufficient protection from predatory birds. Whatever the cause, I appreciate the opportunity to witness this, another manifestation of the way nature has provided to insure the perpetuation of a species.

A STRANGER

By Ranger-Naturalist Enid Michael

A stranger came into camp on the morning of July 5, 1939. The stranger was a large black woodpecker with a fiery chest and a very red face. He was wearing a gray collar; his wings were broad and his flight was crow-like.

When the Black-headed Grosbeaks saw the stranger they uttered alarm notes. The California Woodpecker regarded the black woodpecker as a poacher and tried to drive him out of camp. The robins that have a nest of young over the tent also resented the black stranger and joined with the California Woodpecker in trying to route him. The jays were merely curious about the stranger and gathered about the boughs overhead to look him over. The black stranger refused to be hurried or bothered although he did occasionally utter his high-pitched squeals.

After an hour or so when the Lewis Woodpecker finally decided to leave the neighborhood he flew away with a companion, possibly his mate.

This I believe to be a new record for the month of July as in the last twenty years I have never seen the Lewis Woodpecker in the Yosemite Valley during June or July although they have appeared during the last week of August.

A JULY BIRD WALK

By Ranger-Naturalist Enid Michael

Twice a week during the summer months in Yosemite Valley "Bird Walks" are conducted by the Ranger-Naturalist Service. May is the best month for bird walks for then all the summer nesting birds are in full song, the valley is filled with bird music and many species of birds are nesting. During the nesting and singing season it is easy for the Ranger-Naturalist to conduct a bird walk for then he will have bird nests scattered along the route and then, too, he will know just where to expect certain songs and certain singers. But then comes the hot summer days of July and August when most birds have ceased to sing, young birds have grown up and scattered, old birds are moulting and are reluctant to be about in their disheveled appearance.

The Nature Guide starting off for a bird walk in July knows that luck is needed and hopes that the good fairies may be with him. On July 29, 1939, it was my turn to lead the bird walk. We started from Mirror Lake—a party of thirty persons. I had a feeling that we were going to be lucky when at the very start of the trip a family group of Mountain Chickadees gathered in the willow boughs just above our heads and gave us all a very good look. Further along the trail we had a visit with a flock of Band-tailed Pigeons. Then from the woods near at hand the great Pileated Woodpecker shouted his roll of thrilling notes. Three times he shouted and then a number of the group saw him wing across the sky. A striking bird, big as a crow, long neck sticking out and flaming topknot and with a splotch of white showing in his broad black wings.

We left the trail, walked through the wood to where a fallen cedar tree bridged our way across the swamp. Song Sparrows and Yellow Warblers were singing from the swamp. And by the way, this is the first year we ever had Song Sparrows in the valley during the summer season. We got a good look at a Tolmie Warbler and a family group of House Wrens. On the dead spike of a tall cedar a Red-breasted Sapsucker was perched, his red head and breast gleaming in the sunshine. Seldom do we get sapsuckers on the floor of the valley during the summer months— we were having rare luck.

As we crossed Tenaya Creek we scared out a Kingfisher and in the hyssop garden a flock of Green-backed Goldfinches was feeding. Creek dogwoods were in fruit, furnishing food for robins and thrushes. We were watching a young Spotted Towhee when a slender gray bird flew up, showing splashes of white in wings and tail. It was our old friend the Western Mockingbird, so common in the citrus districts of California, but rare indeed in Yosemite Valley. (The only previous records of Western Mockingbird in

Yosemite Valley are of lone birds, the first record September 21, 1924 and the second March 21, 1929.)

At the lily pond we sat down on a sandy bank in the shade of the willows for a rest. And it was a good place to see things, looking out across the field of green lily pads. There were still many fresh blossoms of the showy yellow Indian Pond Lillies. Birds were dropping in among the lily pads to splash in the shallow water. It was a rare treat to see a Lincoln Song Sparrow preening on a dead willow branch above the lily pads. And between preenings this bird paused to sing a pretty little whisper song. There was a sudden commotion when a Mallard Duck leaped up from among the lily pads and winged high into the sky. The mallard passed over our heads several times. It was apparent that he wished to come back to the cool seclusion of the lily pond. One of the party remarked that the duck was probably cursing us for interrupting his siesta.

On through the wood we came upon the signs of a tragedy. Some mammal or winged raptore had made a kill and beautiful feathers of a female Sparrow Hawk were scattered all about. One little girl who was with us took some of the feathers for her hat. Another prize that she found was the shed skin of a snake.

Red-winged Blackbird

When we got back to the muddy shore of Mirror Lake Red-winged Blackbirds and Cowbirds were added to the list, bringing the total number of species noted up to thirty-six, which is a goodly number for any time of year.

Tracks of the Great Blue Heron were seen in the mud, but this bird we did not see.

CADDIS-FLY LARVAE

By Ranger-Naturalist Charles W. Schwartz

In many of our small mountain streams and lakes from 9,000 feet on down to Yosemite Valley there exists an insect form which is known as the Caddis-fly. It belongs to the order Trichoptera. This animal is unique and worthy of mention because the larval forms not only build their own houses in which they live but also carry them wherever they go. Each species of larva builds or constructs its house of specific com-

position, architecture and size. In Bridalveil Creek a number of these larvae carrying their houses were found crawling about on stones on the bottom of the creek near the camping grounds on June 18, 1939. The houses were approximately one-half inch long and were constructed of small pieces of grass about one-quarter inch in length cemented together in a criss-cross fashion. On July 10, just below the Box Canyon of Tenaya a large number of these Caddis-fly larvae were found with their dwellings in some little pools of Tenaya Creek. These dwellings were different from those found in Bridalveil because they were constructed of small bits of bark with small flakes of biotite mica cemented together. The houses lacked the uniform criss-cross construction of the other ones described. They were three-quarters of an inch in length. On July 11, a considerable number of these larvae were found in a little pond between the Tioga Road and May Lake. Here the structures were one and one-quarter to one and one-half inches in length and were made of bits of bark and large granules of quartz. In all three of these species, the hardened anterior end of the larva were seen protruding from the house while the soft posterior end was attached by hooks inside the structure and was protected there. The animals move by crawling over the bottom of the streams and ponds. The houses were found to be lined with silk which the larvae spin and this silken material seemed to act as a cement which held the various bits of rock and other material together which was used in construction.

Interesting comparisons between these three species are that the smallest ones were found in the swift flowing stream, the medium sized ones in quiet pockets of Tenaya Creek while the largest ones were in a small mountain lake which had a higher temperature than the other bodies of water. Some species of stream-dwelling Caddis-fly larvae are known to spin small funnel-shaped nets of silk with the large opening pointing upstream. None of these were seen but they are used to collect small vegetable matter which floats in the water and upon which the larvae feed.

The Caddis-fly larvae spend the winter in this stage as discussed. In the following summer the larvae attach their cases to some solid object below water level, seal up the entrance to each house and undergo metamorphosis. When this metamorphosis is complete, the pupa stage comes out of the submerged case, crawls up a stem until it is above the water, discards the pupal skin and the adult then emerges and flies off. Although the adults have well developed mouth parts they are not known to feed. The eggs are laid in or directly above water, the larvae hatch, build their houses on the bottom of the stream and are thus ready to repeat the cycle.