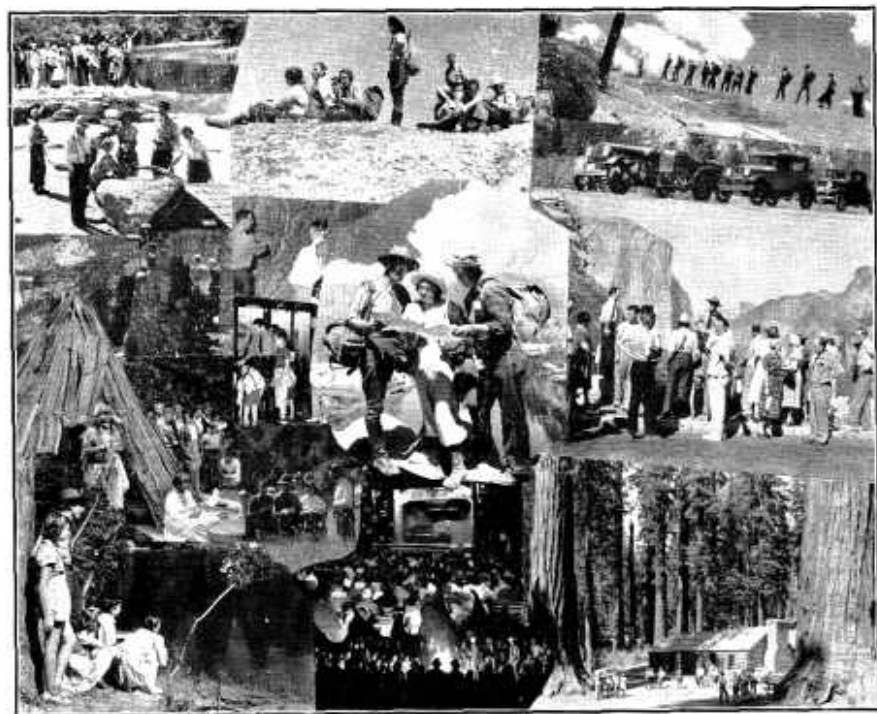


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AFIELD WITH THE NATURALISTS

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REPTILOPHOBIA

By Ranger Naturalist Ernest A. Payne

"A snake! My heavens! Jimmy, get away from that horrid thing before it bites you!"

How frequently one hears such an exclamation uttered by well-meaning park visitors as they wander through the Yosemite Museum, and find themselves on the back porch where the exhibit of live reptiles is housed. Jimmie, who a moment before was an eager, enthusiastic boy absorbed in the thrill of a new experience, has not only been restrained from fulfilling a sincere and wholesome desire to see the snake more closely, but the object of his interest has been made a thing hideous and one of which he should be afraid.

The fear of snakes is so widespread that we are prone to accept it as an inherited reaction over which we have no control. One needs only to present a snake to the view of any typical group of people to learn how deeply engrained this fear and abhorrence of snakes really is in the emotional response of human beings. If we were to ask any member of this average group to explain the reactions of those present, he would

probably reply that it was "natural" or "instinctive," inferring that the individual is born with the fear of snakes just as surely as he is born with blue eyes or curly hair. Can we accept this as a valid explanation?

Jimmie illustrates the typical child and his response is the normal response of a normal boy to a new experience. If his curiosity and desire to see the animal at closer range had not been suddenly disturbed by the unfortunate exclamation of the adult, he would have undoubtedly picked up the snake and played with it. But now his reaction toward snakes is influenced and affected by the sudden interjection of the vocal warning.

I have been unable to find anything in the literature that would suggest that the fear of snakes is an inherent endowment of the human organism. However, there is much that would indicate that we learn to fear snakes.

Dr. J. B. Watson, a proponent of behaviorism in psychology, believes that the unlearned emotional responses of the child are very few.

He includes only three: Fear, rage, and love. For our problem with Jimmy we need consider only the first, fear. Watson maintains that the stimuli which arouse this reaction in the child are loud noises and the fear of falling due to the loss of support. All other emotions, he believes, are in the form of habits engendered by the modifying or conditioning of these fundamental reactions.

Through conditioning, stimuli which originally produced no action can bring about the fear response. Experiments have shown that the small child is not instinctively afraid of small furry animals such as kittens, puppies, and rabbits, and when such animals are placed with the child he will play with them readily. However, it has also been shown that a fear toward the same furry animal may be developed within the child by striking a gong or making some other loud noise near the child at the same time he reaches out for the animal. If this procedure continues, the child associates the noise with the animal, and he learns to be afraid of the animal.

Could it not be possible that thousands of Jimmies throughout the country have developed a fear of snakes by means of a very similar psychological process of conditioned learning brought about by the hysterical fear-filled voices of those with whom the children come in contact?

That this fear is sincere cannot be doubted. We have all seen people who nearly faint when they discover that a snake is near, even though

it be absolutely harmless and safely secured in a cage. During the summer of 1940, one of my hiking parties found a rattlesnake near the trail in Little Yosemite Valley. One of the women screamed and ran wild-eyed up the trail, insanely, unreasonably, and sincerely afraid. With such a widespread feeling existing toward snakes could there possibly be any justification in fact for the human response to snakes as would be indicated in the actual bodily injury brought about by the bites of poisonous species?



Rubber Boa, a harmless, and beneficial species common in Yosemite.

Throughout the world there are about 2400 kinds of snakes. Of this group the vast majority are harmless. In the United States only the

water moccasin or cotton mouth, copperhead, rattlesnake, and coral snake are venomous. Of these, only the rattlesnake is found in California. In his book, "Snakes Alive," Clifford H. Popes says: "Moreover, many species belonging to poisonous groups either cannot inflict a fatal bite on man, or rarely ever do so because of the docile nature of a habitat that keeps them from coming in contact with man. I estimate that only 8 per cent of the species of snakes deserve to be greatly feared by man."

It is estimated that 160 people die from snake bite every year in the United States. In comparison, the toll from automobile accidents reaches thirty thousand deaths each year. When we consider the thousands of likers who frequent snake-infested areas each year, we see that the real danger is negligible.

In a letter from Dr. Tracy I. Storer of the department of Zoology, University of California, he states that in California in the decade 1930-1939, the number of deaths from rattlesnakes varied from one to five a year with a total of eighteen for the ten-year period.

Of particular concern to the Yosemite visitor and to the National Park Service staff is the interesting record of rattlesnake bites within the park furnished by Associate Park Naturalist M. E. Beatty:

"As far as I have been able to ascertain from both hospital and park records there has been only one instance of a park visitor having

been bitten by a rattlesnake during the last fifteen years. This one case was that of a large, rather fleshy woman who imagined she had scratched her leg on a piece of brush while hiking. As a result of exercising strenuously and failure to obtain prompt medical attention, the bite proved fatal.

The records also show a few cases of local government employees having been bitten while engaged in brushing operations and similar work, but in every case prompt medical attention resulted in complete recovery."

In view of the fact that during this fifteen-year period several million people have visited Yosemite, the number of actual injuries from venomous snakes is extremely low, and certainly as a valid basis for causing fears in the minds of visitors, the record needs no further comment.

On the other hand, the animal in Yosemite about which there is more inquiry and that attracts more attention than any other is also the animal that damages more personal property, purloins more campers' food, and causes more physical injury to the park visitor. I refer to the American Black Bear. In addition to the number of tents torn, quantities of bacon, milk, bread, cereal, and other foodstuff stolen, the official records show that during the past four years 139 people have been treated at the Lewis Memorial Hospital for injuries inflicted by bears. In 1940, there were 2; in 1939, 53; in 1938, 17; and in 1937, there were 67. Certainly

an animal with this reputation merits utmost caution on the part of the



camper. But even it should not be feared in terms of the common con-

ception of the word fear. If people would only obey park regulations and avoid fool-hardy intimacies with this wild animal injuries from bears would be very infrequent.

The naturalist division of the National Park Service has a real opportunity and responsibility in its contacts with the multitude of park visitors each year in replacing many of the age-old, ill-founded fears and beliefs based upon superstition, misinformation, and ignorance (not only in relation to snakes, but in all phases of natural history) with a positive attitude of caution, understanding, and appreciation based upon facts which have resulted from scientific observation and correct thinking.

BIG TREE HAZARDS

By Ranger-Naturalist Verlin Baysinger

The large *Sequoia gigantea* of the Sierra represent one of the singular wonders of the world. The Mariposa Grove of Big Trees is one of the most readily accessible of all the groves along the Sierra slope, and is yearly enjoyed by thousands of appreciative visitors. Along with its popularity, a number of trees in this remarkable stand have suffered and weakened through undermining influences coincident with increased travel.

The development of roads into the Mariposa Grove is of primary and secondary importance in the effect produced on the trees. The well-planned loop road, laid out ingen-

ously to display the Big Trees to the utmost advantage, affords visitors driving over the approximate eleven-mile stretch an opportunity to see and to study these Big Trees which are unequalled elsewhere. It is self-evident that the heavy traffic through the grove will ultimately produce secondary effects on the trees.

The numerous visitors who come into the grove differ extremely in their reactions and in their observations. A majority is in search of the Tunnel Tree, and prefers to drive through the grove without stopping. Fortunately, the others desire to leave their cars to study the trees,

gaining some appreciation of the majesty of these monarchs. The



travel load increase alone multiplies the fire hazard many times, and this impending danger hangs over the trees threatening their destruction

like the sword of Damocles.

Another factor to be considered is the damage to the Sequoia that results from the constant walking of hundreds of people over the ground which holds the very shallow root systems of these trees. The earth is packed solidly over the roots, and thus deprives them of essential aeration, due to injury of the root hairs of the root system, and prevents the intake of sufficient nourishment. This type of injury was exhibited by the Grizzly Giant several years ago. At that time the appearance of its foliage was very faded and dull brown in color. Much litter was scattered on the ground beneath which had been blown down by the wind because of the weakened condition of the tree. The Grizzly Giant had suffered because of an old fire burn, and then its roots were injured by construction of the road which passed below the tree. Finally, the assault by appreciative visitors as their footprints packed the earth over the roots brought about a critical situation. This was remedied only a short time ago by the construction of a rustic barrier, by turning of the soil, and planting of shrubs at the base of the tree. Such treatment resulted in an improvement of the condition of the Grizzly Giant which was very obvious this spring. Other trees have likewise suffered. No doubt the Massachusetts tree was similarly weakened by the effect of road construction on its root system with subsequent soil compaction by visitors, which eventually caused it to fall in the wind-storm of 1927.

In the spring of 1940, another very important observation was made by people interested in the Big Trees. During road grading operations in the upper portion of the grove about the middle of May, the Haverford Tree showed some evidence of disturbance. Workers who were on the road crew heard cracking noises in its hollowed base when the heavy grading machinery passed and turned near the tree. Three men investigated, and found new cracks in the root attachment on the north-east side of the tree. This section has a width of about five feet and contains intact bark, cambium and sapwood. The crack had taken a course from the upper right of the section, continuing in a zigzag direction down and to the left, and was about one-quarter of an inch, according to information given by the workmen. This was reported to Superintendent Lawrence C. Merriam, who made a personal inspection with other interested park officials.

I arrived in the grove for duty on May 27, 1940, and having been informed about the Haverford Tree, at once made a study of it. The report of the workmen was accurate. Also during my study, which took up about twenty minutes, there were several distinct popping noises originating from the fissure. On successive days I visited the Haverford Tree and the observations were duplicated.

On June 1, 1940, a heavy cloud mass rolled down into the grove early in the morning. The dense fog

was dispelled about noon by high winds which continued throughout the day, and again I heard cracking sounds from the break in the Haverford Tree. The following day a study of the tree showed that the break had widened. There were no sounds. Several days later this crack was measured. It had widened to a fissure $1\frac{1}{2}$ inches in width and its depth could not be definitely determined due to obstruction by fiber. Further watching showed no change and no popping sounds were heard.



In closing, it is interesting to theorize on causes and results. The Haverford Tree is greatly weakened by a bad fire scar which has burned out the heartwood at the base and has destroyed about fifty per cent of the root attachments, cambium and sapwood layers. Invasion of the sapwood by carpenter ants (species unknown) has occurred in several places. The tree stands very near the loop road intersections and the heavy traffic may cause some damage. Possibly the grading machin-

ery working on the road set up vibration that could have caused the tree to vibrate. There is a stream flowing past the tree on the north and northwest side, the same side on which the cracking occurred. This boggy area early in the spring may not furnish sufficient support for the tree. It is interesting to note that the lean of the tree is definitely to the north at an angle to the breaking root attachment. This may indicate

a greater lean has developed this spring.

In spite of this seemingly indicative incident, the tree may be able to withstand the forces of destruction for many years to come. It will be interesting to watch, and the fortune of the Haverford will all depend on summer storms and high wind. Fortunately hundreds of other trees are still in good condition and will remain for many future generations.

OBSERVATIONS OF THE BLUE-FRONTED JAY

By Elizabeth H. Godfrey, Museum Secretary

As an all-year-round resident of Yosemite Valley, the Blue-fronted Jay (*Cyanocitta stelleri frontalis*) gives the general impression that it is a self-appointed "boss of the birds."

With its crest, head and forepart of body blackish, and wings, tail, and hinder part a deep, vivid blue, this handsome bird cannot be missed by even the dullest observer. If its attractive blue plumage, sailing through space on a wing-spread dip or contrasting with forest green, does not attract attention, then a series of saucy, scolding notes jarring the stillness, will command it.

No other bird in Yosemite Valley is obviously more lacking in the good trait of minding its own business as is the Blue-fronted Jay. In fact, it seems to take delight in deliberately making life miserable for its fellow creatures. For instance, on numerous occasions during the sum-

mer of 1940, when the Blue-fronted Jay and the Sierra Chickaree were attempting to eat at the same feeding table, the chickaree having had its fill, would carry off a bit of toast, and place it on an oak limb for a future snack. When the chickaree returned to the feeding table for another piece, the Blue-fronted Jay would swoop down on the limb and snatch its toast. This performance would continue for a number of times without the squirrel's becoming aware of the thieving going on. The jay in turn would hide the stolen toast under a dead oak leaf, or would fly a short distance to eat it.

Another case of mischievous interference on the part of the Blue-fronted Jay was observed one windy day in late April, 1938, while watching a robin commence the construction of a nest. The first piece of nesting material the robin brought was a fairly long string. No sooner had

this been arranged on the nesting site, which was the limb of an oak near the Administration Building, than a meddlesome Blue-fronted Jay picked up the string in its beak and carried it to the limb of another oak some 30 feet opposite. Thereafter, each time the robin's back was turned, the jay stole the nesting material it had placed on the limb. In retaliation, the robin attempted to drive off the jay by charging in its direction, but the jay managed to escape the attack. At last the robin gave up, and flew away.

In this particular instance, "give a Blue-fronted Jay enough string and it will hang itself," proved to be the applicable adage. On the same day just before lunch time, the jay was viewed on an oak limb from a second-story window of the Administration Building, toying with the stolen piece of string. After lunch, attention was again attracted to this same tree by a chorus of distressing screams from many jays—a sure indication that one of their number is in trouble. The cause of the alarm was at once apparent. From an oak limb, the meddlesome jay swung in an upside-down position scolding violently, with its feet so entangled in the string that they were held as though they had been securely tied there. A ranger was summoned to rescue the jay from what appeared to be a boomerang of fate. He quickly took out his pocket knife, cut the string, and set the jay free. The following day, when the robin

resumed nesting activities at the original site, the jay was nowhere to be seen.

In connection with nest building, it is a delight to watch a pair of Blue-fronted Jays constructing their nest. While the male robin does not help at all with the nest, the male Blue-fronted Jay has as much a part in building it as his mate. The writer had an opportunity to observe a pair of young Blue-fronted Jays working on a nest in an immature cedar near the front of the Administration Building in early April, 1940. Together they built the nest in a chummy, happy manner, bringing twigs, dead leaves and mud. If one arrived at the nest with some material while the other was arranging twigs, the former would gently push the other bird away, so that it might contribute its material to the nest. This was done without so much as a scolding note from either bird.

When this particular nest was near completion, it proved to be of such poor construction that part of it fell away from the supporting branch and after apparent consultation and consideration on the part of the jays, they abandoned it.

One afternoon, a few days later, it was interesting to observe a pair of jays carrying off the material that had been used in this nest to another site. In a half hour's time every speck of it had been moved. Whether this was the same pair of jays that originally built the nest could, of course, not be determined.



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Dan Anderson