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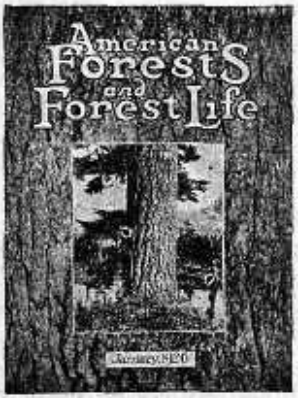

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BLISTER-RUST AND ITS CONTROL

By George A. Root

The white pine blister-rust, a destructive disease of white pines, is now established in western North America, in the states of Idaho, Montana, Washington and Oregon, having come in 1921 by natural spread from an infection in British Columbia. The disease is of European origin, having been introduced into eastern United States on pines imported from Germany. It was first found in New York state in 1906, and since that time has spread over a considerable portion of that state and New England. It is also found in some of the lake states.

The rust is only destructive to those trees which bear their needles in bundles of five. In this group come the eastern white pine, the western white or mountain pine, and the California sugar pine, species of great commercial importance. It is a bark disease on the pine, killing trees or branches by shutting off the supply of sap. The disease does not spread from pine to pine. From diseased pines it spreads to currant and gooseberry leaves for distances up to 100 miles or more by means of wind-carried spores. These produce a rust on the under side of the leaves, which in a short time produce spores which carry the disease back to the pines. These spores are short-lived and pines within a comparatively short distance become infected. This distance has been set at about 1000 feet. This makes it possible to control the disease locally by destroying currants and gooseberries.

Editor's note:

George A. Root, assistant pathologist, Bureau of Plant Industry, United States Department of Agriculture, in charge of blister-rust control for California, was a visitor in Yosemite at the invitation of the park naturalist July 23 to 26, acting as instructor to our Yosemite School of Field Natural History on the subject of forest tree diseases and lecturing at hotels and camps of the valley.

known as alternate hosts, within the above infecting distance. Experiments conducted during the last four years in the western forests indicate that this can be done at a figure low enough to be economically feasible.

The presence of the disease in Oregon and its gradual spread to the south makes it a potential menace to the sugar pines of California. The sugar pine is typically a California tree, and the largest pine species growing in the United States. Aside from its high value as a timber tree, its importance from an aesthetic standpoint cannot be overlooked. This is especially true with reference to the national parks of the state. Its long extending branches and large cones make it a marked tree to the thousands of park tourists. It is hard to conceive the Sierra Nevada range without sugar pine.

It is sufficient to say that the national park authorities are alive to the situation. They are aware that protection from insect pests and plant disease should be afforded this magnificent tree. Its disappearance from the forest canopy from whatever cause would indeed be a calamity.

The finding of pinyon blister rust on gooseberry leaves near Mirror lake is worthy of mention. This rust attacks the pinyon or nut pine, common on the eastern slopes of the Sierras. This tree has one needle instead of five, like the sugar pine. From this tree are obtained the well known pine nuts. This rust, of no particular economic importance, is of interest because it has the same alternate hosts as the white pine blister rust. It is difficult to distinguish the currant or gooseberry stage of these two rusts. That they are of two distinct species has been determined by laboratory innoculations and the fact that sugar pines growing in a heavily infected pinyon area have never shown infection.

Pacific Oak Twig Girdler

By H. E. Perry

Visitors in Yosemite this summer have commented frequently on the premature withering of scattered leaves in the black oak trees which are so common on the floor of the valley. The leaves thus noted have a tendency to cling to the twigs and the effect gives an unhealthy appearance to the trees. Close examination of the affected twigs reveals the presence of the small scale-like egg covering of a tiny beetle known as the Pacific oak twig girdler (Agrilus angelicus). The development of this beetle on the black oak is quite unusual for its work is ordinarily limited to live oak trees.

The life cycle of the Pacific oak twig girdler requires two years. Adults emerge from dead twigs from May through July. During this stage, they feed on the foliage of the host trees. Eggs are laid singly on the bark of live twigs and a larva hatches from each egg by cutting its way through the bottom of the egg into the bark. Thereafter it bores spirally along the tender inner bark, thus girdling the

twig. Towards the end of the second year, the larva forms a cell in the wood of the twig and remains in the pupa stage for a few weeks, after which it emerges as an adult, flies to the foliage, feeds, mates, lays possibly twenty-five or thirty eggs on the bark of as many live twigs, and thus the life cycle is begun anew.

Inasmuch as the larvae are working on the black oak tree this summer, an unusual host tree, it is possible that they will not live out the winter, according to Dr. H. E. Burke, who discovered their presence on these trees. If such proves to be the case, little damage will result this time and the Pacific oak twig girdler will probably not be seen on these trees again until some of the adult beetles fly away from their usual host, the live oaks, and again deposit their eggs on the twigs of the black oak.

Marmots Are Disappearing

By H. C. Bryant

William Colby, secretary of the Sierra Club and leader of more than twenty-five back country trips in the Sierra Nevada, has recently called attention to the scarcity of marmots. He states that on this summer's trip of the Sierra Club from Huntington Lake northward over the Muir trail to Yosemite National Park through territory where marmots were once very abundant the club did not see a single animal. Marmots were once abundant around the camp at Merced Lake; this year a party of twenty-one, while making the rounds of the Hikers Camps, failed to see a single marmot at Merced Lake and but one during the whole trip, this one on the north side of Vogelsang Pass. Ten years ago marmots were commonly seen around the Sierra Club Lodge at Tuolumne Meadows; this year not a single animal was discovered. Above Tenaya Lake marmots are still to be seen as in past years. C. A. Harwell, Park Naturalist, reports seeing four on the Tioga Road two miles west of Tenaya Lake while out with a party of eight Sierra Club members. He saw one or more of these marmots on several trips past the same location August second and third.

As a hypotheses for the disappearance of this large mammal, often times called ground hog or woodchuck, the following might be named: disease, periodic fluctuations in numbers, weather conditions, or normal disappearance of a species toward the close of the age of animals. So far no real evidence is at hand to back up any of these or any other guess as to the disappearance of this animal, which ten years ago was exceedingly common near timber line throughout the central Sierra Nevada. It is quite possible that this can be considered a time of minimum numbers and it seems reasonable to expect that a series of years will bring these fast breeding rodents to another period of abundance.

Cycles of scarcity and abundance are known for almost all rodents. The gray squirrel suffered diminution as the result of a severe disease several years ago until not a one was to be found on the floor

of the Valley. Now it is again encroaching upon its former habitat. At least six different squirrels have been noted on the Valley floor for the past summer.

There seems to be no doubt about the fact that marmots are scarce throughout the Yosemite National Park region this year. Evidence is yet to be gathered as to the real reason for this scarcity.

Billy, the Bear, Sets a Record

By P. J. White

The bears of Yosemite National Park are arousing more interest than any other feature of the park. "Where do we go to see the bears?" Many times a day this question is asked the ranger-naturalist, who obligingly directs the inquirers to the likeliest place. It is unfortunate that all of these interested visitors to Yosemite could not have been at the government cookhouse one evening during the last week of July when Billy, a big, amiable, black bear, came for his regular evening cleanup of the garbage pail.

Billy was greeted cordially by the men who planned to give him a treat that he would never forget and, at the same time, test the eating capacity of a big hungry bear. The volunteer cooks soon had hot cakes covered with syrup coming in a steady stream from the kitchen stove to the back door where Billy was waiting. After exhausting the supplies, the cooks, and even the bear, a final check showed that Billy had consumed seventy-two flapjacks. At the finish he was seated on the ground, groaning and fairly gasping for breath, probably indicating a feeling of both pleasure and pain.

This interesting eating exhibition shows the remarkable ability of the black bear to adapt himself to the presence of man. In his natural environment his diet consists of various kinds of seeds, fruits and berries, such as the berries of the coffee berry (Rhamnus californicus), green manzanita (Arctostaphylos patula), wild cherry (Prunus demissa) and poison oak (Rhus diversiloba). Grasses, liliaceous plants and seed heads of various annuals are consumed. Carpenter ants and other insects are taken in considerable numbers. But when he lives near human habitations he adds many choice articles to his bill of fare. Unguarded hams, canned goods, sugar and bacon are much to his liking and he does a lot of prowling about camps looking for them. Garbage cans are quite systematically turned over and searched. But this is not the entire story of Billy the bear.

Billy, and also Brownie, were until 1923 caged in the Yosemite zoo. At that time the superintendent of the park decided that these two bears weighing about 800 pounds each were costing the government too much for food, and that a cut in the budget of several hundred dollars a year could be effected just by turning Billy and Brownie out to forage for themselves. Uncle Bob Selby, caretaker of the museum and the zoo, tells the story of his attempt to liberate, or rather, get rid of them.

He says that he opened the gates of the cages and left them open for a week but no bears came out. Billy, who showed a little more curiosity than Brownie, came to the doorway and looked out five or six times, but otherwise evinced no desire to leave the den which had been his home for eight years. At the end of the week Mr. Selby got into the den with Brownie, walked behind her and drove her out. She seemed to be quite happy at being liberated and since then has been sighted but twice. But Billy would not be driven out and so the following strategy was resorted to, involving a bit of coaxing:

On December 22, 1923, when Billy was down in his den getting ready to hibernate for the winter months, the caretaker cut up some choice pieces of kidneys, of which the bear was very fond, and went into the cage. He aroused Billy and offered him the first piece of meat, which he ate; then he dropped the second piece in the middle of the cage, the third on the doorsill, and the fourth about six feet outside the cage. Billy, lumberingly, followed this trail eating each piece in succession until the doorway was reached. There he hesitated about stepping out after the last piece but greed overcame caution. Billy, however, is a mighty big and long bear, as his weight of 800 pounds indicates, so that he was able to step out with his front feet and stretch over the two yards of intervening space to the meat and still leave his hind feet inside his home.

But here was the opportunity looked for, and the gate was slammed down on him, making him jump outside. Poor Billy immediately began investigating the ropes which held the gate and later wandered about the cage all day trying to find a way in. Finally giving it up as hopeless, not knowing that he could have torn open the cage at will with his enormous strength, he wandered off. As if in revenge he found the loaded garbage wagon and proceeded to scatter tin cans right and left over the ground in his effort to get something more to eat.

Showing that he remembers the kind treatment and the delicious food he had received while in captivity, Billy still comes down every evening promptly at 6 o'clock to the cookhouse to get the choice leftovers, otherwise known as the "swell swill of the valley."

Yosemite Bird Report for August, 1929

By Enid Michael

The month of August in the Yosemite valley was warm and dry. Great billows of cumulus clouds often floated lazily across the summer skies but no rain fell to revive the fast browning flats on the north side of the valley. The low lying meadows were still refreshingly green at the end of the month, but Yosemite Fall was dry and the Merced river itself was at a low ebb. It presented the calm and reflective moods that come with age after a well spent life.

Monardella, lessingia, godetia and eriogonum were among the late

blooming flowers that made pretty gardens in certain warm sections of they valley, and along the river margin a few heleniums were still freshly blooming. Also the solidagos had begun to wave their golden plumes, and these plumes were often mirrored in some placid pool.

Fruiting shrubs such as brunus rhamnus, sambucus and arctostaphylos presented a variety of foods upon which the birds might feast. The rhamnus fruit was the most popular and to the thickets of rhamnus bushes came robin, pigeon, tanager, California woodpecker, evening and black-headed grosbeaks, and occasionally California purple finches. Also bear, deer, ground squirrels and chipmunks took a share of this last named fruit.

During the month sixty-two species of birds were noted, which number brings the August average for the last nine years up to fifty-eight plus. Ornithologically the outstanding features of the month were mountain quail nesting on the floor of the valley, the great numbers of evening grosbeaks, and the recording of a new hawk in the valley. Not since August, 1919, had we seen a family of young quail on the floor of the valley. The evening grosbeaks have shown a steady increase in numbers year after year since 1920. Each year there have been more nesting pairs and each year the flocks have grown larger.

Now about the hawk: On August 25 while we were climbing the Leaning Tower our attention was attracted by a sharp yelping note reminiful of the single yelping note of a gull. The sound seemingly came from the face of a sheer wall. While we were trying to locate the author of these notes a hawk was seen to suddenly leave a crevice in the wall. This hawk circled about us crying wildly. It appeared to be about the size of a Cooper hawk. It had a light underbody, a dark head and back, and as it sailed below us the wings appeared to be broadly tipped with black. The tail appeared to be bordered with one light band. During the 15 or 20 minutes that we watched the bird it came to perch twice in a tree that hung to the wall. Finally the hawk flew to the crack and disappeared. The wall below the crack was much marked by droppings, and in the crack there appeared to be stuffed a litter of twigs. Soon after we started down from the tower a second bird appeared and began to scold. This was apparently the same sort of hawk only a much larger bird. These hawks may not have been duck hawks, but if not, what sort of hawks were they? The wild yelping, almost barking, was a call that we certainly had not heard in the valley before.

RANGER FINDS A FLOWER GARDEN

On July 28, 1929, Ranger William Reymann while on a trip to plant fish in the lakes and streams of Yosemite Park, discovered a flower garden of rare beauty.

He says: "I had turned off the main Wawona road about one-fourth mile beyond Chinquapin. I followed the old abandoned logging railroad about two and one-half miles. Near the junction of Corral and Bishop creeks with the South Fork I saw a garden of white waxy [illegible] (Lilium washingtonianum) growing through chinquapin and snowbrush to the height of four and five feet. The air was filled with rarest fragrance. I examined the garden more closely, and there were three or four dozen plants. Each lily stalk, three or four feet high, carried five or six waxy white blossoms opened like Easter lilies and they shed a delicate fragrance from their yellow stamen. The same stalk had also five or six unopened buds.

"In memory, this is my garden, but I wish that everybody could see it."—Mrs. H. J. Taylor.

AFIELD WITH RANGER NATURALISTS

The Spotted Sandpiper Eats Ants

On the morning of July 21, 1929, we were seated in the shade with our backs again the trunk of the cottonwood that stands on the bank of the Merced near the Rover pool. While we were resting here a spotted sandpiper winged low across the surface of the pool and alighted on the sandspit where grow a clump of willows. He tripped teetering over the sands, pausing now and then to spear a fly as he came forward. When he reached the trunk of a leaning willow he left the beach, climbed onto the leaning trunk, and began to pace leisurely back and forth. Every few seconds he would pause, lean deliberately forward, and then make a quick jab with his long bill. Somehow this movement was remindful of a rubber band deliberately stretched and then suddenly allowed to snap—in other words, like popping flies with an elastic. Soon we realized what was taking place. The sandpiper had turned ant-eater and was enjoying a feast. He had come upon the traffic lane of a hard-working colony of ants and he was making the best of the opportunity. The ants were moving in both directions and the sandpiper had intercepted their line of travel. He paced back and forth along the trunk line confining his activities to a limited stretch of perhaps four feet. When the line of marching ants had been cleared from this space he would wait a moment for other marching ants to move in and then again he would continue the gentle pastime of spearing a breakfast.

We watched the sandpiper for an hour and during most of this time he was busily engaged, however, he did at times pause to preen his feathers or to stretch his wide wings.

The spotted sandpiper has a rather awkward gait; a swinging, teetering stride as though of uncertain balance, but when he is stalking flies along the margin of a stream he is a most fascinating fellow. There is no uncertain balance then, he moves forward deliberately and sure, and when within striking distance of his prospective victim he leans slowly forward. He leans far forward with his neck apparently stretched to the limit, but when sure of his kill he strikes like a flash and it is then seen that he has still more stretch in his neck. The sandpiper may steal upon his prey and assume his killer attitude only to have his anticipated tit-bit fly before he strikes, but once the trigger is pulled and the sandpiper head snaps forward it is just another fatal moment, just another departed fly.—Enid Michael.

FAMOUS TREE DYING

Sentinel Dome is capped by a wonder tree. Rooted in almost solid granite at an altitude of 8117 feet, the trunk making three complete turns, its top bent almost at right angles, it is easily one of the most striking individual of all trees.

Countless gales have spent their fury in the branches of this old Jeffrey pine; the snows of many winters have bent its head. A veteran of many struggles, battle-scarred but unyielding, bowed with adversities, but still courageous, it grips and fascinates one as if by a magic spell. Well might it say:

"Twisted of form,
Bowed of head;
Only God knows
The life I've led."

It is the mecca for the journeys of multitudes of tourists who visit Glacier Point, then walk or drive to Sentinel Dome, one mile distant. They worship at its feet, or climb into its spreading arms to have their pictures taken. Its glory is not transient, but revivified, relived in the heart and mind during periods of meditation. And yet it is badly in need of the aid of friends.

What the elements have not been able to accomplish, its thoughtless friends and natural agents of decay are doing. Admirers by scores have

cut their worthless initials into its life blood. Some have chopped steps into its trunk the better to ascend and extend their inane gaze. Thousands have packed the meager soil at its feet until pavement-like, it contains no nourishment. Unless it receives immediate aid it will become but a memory.

Will no friend come to its aid? Are we so thoughtless that we will do nothing to save this famous tree? Tree surgeons are needed to arrest the decay. Rich humus should be furnished to supply it nourishment in its sickness. A fence should be constructed to keep its friends from trampling it to death. A sign should warn the unthinking not to mutilate its beauty. It needs help now. Delay will mean its death. Let us preserve this, one of the most distinctive, most admired and most valuable trees in the entire park.—C. H. O'Neal.

MOUNTAIN SHEEP SKULL FOUND ON PARSONS' PEAK

Mountain sheep once ranged throughout all the mountainous regions of California. In John Muir's day they were abundant in Yosemite National Park. In the late 70's they began to disappear as a result of over-hunting by sheep herders, who preferred the wild sheep to the domesticated ones when it came to a food supply. In the past six years a number of mountain sheep skulls have been discovered around the higher peaks, reminding us of the former abundance of this game mammal. Members of the Sierra Club party found a specimen on Mt. Ehrnbeck several years ago. A ranger discovered one on White Mountain. Park Naturalist Russell secured one from in back of Koip Glacier. Two years ago a man found one on the south slope of Parson's Peak, near Boothe Lake. This year the Museum has received two skulls. A fine large male skull with the horny covering still intact on one side was found by Walter Powell, a student in the Yosemite School of Field Natural History, on the east side of Parson's Peak above Ireland Lake, on August 5. During the same week a Sierra Club party discovered a skull of a young female mountain sheep on the Lyell Glacier, where it has probably been held in cold storage for many a long year. Though there have been occasional rumors of the presence of mountain sheep in Yosemite National Park yet none of these rumors have been verified. It is probable that remnants of skulls and horns will continue to be found around the high peaks, but it is doubtful whether any living wild sheep remain in the park. The nearest band of wild mountain sheep is to be found in the Mt. Whitney region.—H.C. Bryant.

Lincoln Sparrow Nest

On the morning of July 20, 1929, the nest of a pair of Lincoln sparrows was discovered. In the nest were four young birds fairly well feathered and perhaps half grown. The nest was located in a marshy meadow on the Pohono trail at an elevation of approximately 7000 feet. Now the remarkable thing about the nest was its situation. It was nestled among a thin stand of sedges and actually resting in two inches of water. It appeared to be floating on the water, but was really anchored to the sedges with thin strands of plant fiber. It was a rather firm nest built of grasses and plant fibers and was apparently waterproof. It was hard to believe that the eggs could have been kept dry through the period of incubation, but here was the nest filled with half-grown young. The birds were able to approach the nest without exposing themselves to view. They had approach lanes through the sedges which quite concealed their movements when going to or from the nest.—Enid Michael.