YOSEMITE

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New Association Chief

As we reported in a recent letter to the membership, David O. Karraker has taken over his positions of Chief Park Interpreter and Director of the Yosemite Natural Hstory Association.

Dave arrived in Yosemite one jump ahead of the summer visitors. Thus, was obliged to adjust to this environment (he had been in Washington, D.C.), get his family settled, become aquainted with his National Park Service colleagues and, with the other hand, direct the widespread visitor interpretive programs. To accomplish one or two of these would be a fair job; to do them all is, he says, exciting, to say the least.

His interpretive province reaches between Tuolumne and the Mariposa Grove, some twenty-five crowflight miles. There were some 150 interpretive programs going on weekly within the park and 95 interpretive people presenting them.

Having served as Chief Interpreter in three other parks, he has been involved with cooperating associations (which is what the YNHA is) for some time, so is familar with association aims and activities.

Asked about his concept of the interpretive needs in this park in 1972 and how he intends to fill them, Karraker said:

First of all, I am very impressed by the dynamic work of the Yosemite Natural History Association. Over the years it has provided an amazing array of services and programs. It has been most important in furthering the exciting in-

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Among a number of naturalist programs for children was "Yosemite Adventurers" designed for the four to seven year old visitor. Here, Mary Ruble invites inspection of a tiny alder seed pod.

Burns, Beetles and Sequoia Cones

Enough is known about the close relationships between plants and animals to frighten almost anyone concerned with environmental quality, especially when one considers all that we must not yet know, as we forge ahead changing planet earth.

Another intricate yet vital interrelationship was recently discovered in the Giant Sequoia by the Richard J. Hartesveldt research team from San Jose State College. (Dick was once a ranger-naturalist in Yosemite's Mariposa Grove.) Ron Stecker, the entomologist with the team, virtually lived in the crown of a Giant Sequoia in Sequoia National Park in the Redwood Mountain Grove for almost five summers. From his perch, he studied the insect populations and other aspects of sequoia ecology previously unaccessible to science.

One of the most interesting questions which he answered was: Why do Giant Sequoia cones turn brown and shrink enough to drop

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Burns, Beetles and Sequoia Cones

their seeds? Most conifer cones drop their seeds and fall to the ground on a regular schedule. The Giant Sequoia pollinates its cones in late winter. The seeds mature and are viable at the end of the second growing season, but the cones remain on the tree, tightly closed, continuing to grow for as long as twenty-two years. Stecker found that usually by about the fifth year, most cones become infected by the larvae of a Cerambycid beetle, *Phymatodes nitidus*. As the larvae feeds, it eventually cuts enough vascular tubes to kill the cone and release the seeds.

Under ideal conditions only about one seed in a billion grows into a mature tree. Today, with the elimination of forest fires in the sequoia groves, conditions are far from ideal.

The soft, friable, ash-covered mineral soil which is exposed after a fire is nature's perfect seed bed, so a Sequoia seed which becomes buried there has a good chance for growth. Hartesveldt has recorded an unusually large number of Sequoia seeds falling shortly after experimental fires. The heat generated by the fire was enough to trigger the opening of the beetle infected cones at precisely the time the bed was at its best. *P. nitidus* has been associated with the Giant Sequoia since the Oligocene, 35,000 years ago, while all all other members of the genus feed on broad-leaf trees. The evolution of the Giant Sequoia and this beetle has been closely associated. Now, the Giant Sequoia seems to rely almost completely on the beetle for the cones to open at the right time and guarantee reproductive success.

Interdependency — interaction — evolution. The survival of the things we cherish depends upon our understanding of these complexities of nature.

Norman Messinger
Wawona District Naturalist

It's Environman

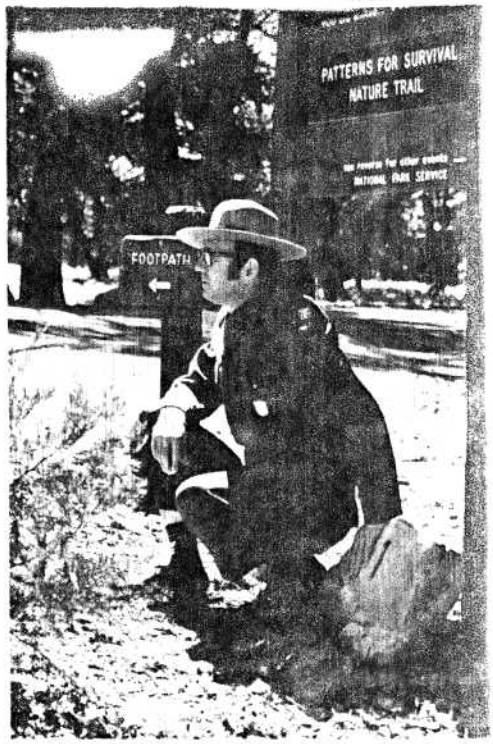
You and I are an integral part of the "web of life" clinging to the surface of Planet Earth. Environman symbolizes that reality. He is inseparably a part of the web and interdependent with Earth's other life forms. He is placed in the middle of the design, only by the artist.

Man is different from his fellow creatures in the extent of his ability to change natural environments. He frequently imposes his laws on nature, instead of identifying and obeying natural laws that govern his existence as an interdependent creature. "It's not nice to fool Mother Nature." Man's developments reduce nature's variety which supports his survival.

Environman is the symbol of "environmental education" in the National Parks. The web is broken into five "strands" which offer an orderly approach to increasing man's awareness of his natural role in nature. Strands are a means of guiding the teacher and students in encountering the complexity of the natural world beyond the classroom.

The five strands are: variety and similarity, patterns, interrelation and interdependence, continuity and change, and adaptation and evolution. Taken in order, they represent a logical sequence of learning: inventory, organization, action, extension of action in time, and modification and adjustment.

The egg-shaped cone of the Giant Sequoia will vary in length from 2 to 3.5 ins. Each cone may contain between 100 and 300 seeds which mature in their second summer.



Environmental Specialist John Krisko, II, at the start of his newly designed self-guiding nature trail. A printed leaflet explains the stops among trees, in a meadow and along the river, each stop significant in the web of life.

Yosemite's Environman is called an "environmental education specialist". He has been active, both inside Yosemite and in surrounding communities, bringing the strand system to teacher workships, to youth leaders, and directly to students. He also attempts to relate Yosemite to the special needs of varied groups of all ages, physical capacities, and cultural backgrounds.

He would like to visit your community to learn your environmental needs and to offer you expanded natural awareness. He is only one man facing a tidal wave of need, so he prefers to reach as many citizens and students as possible for each day's investment of taxpayers' money. If you are interested, please write to John Krisko, Environmental Education Specialist, Yosemite National Park, Yosemite, California 95389; or phone, (209) 372-4461, extension 61.

The Day They Christened the Stage Coach

It was a pleasantly warm Wawona-type day on July 23.

There were mothers, fathers, children, a few grandparents, a dog or two wandering through the Pioneer Yosemite History Center.

Irv Duncan was pounding hot iron on the anvil in his blacksmith shop making gate hooks, the candle-maker was pouring melted wax (bayberry scented) into her crude molds, the quiltmakers were stitching squares together, the potter was working moist, cool clay, the girls were knocking hot loaves of "pioneer" bread from the pans, ignoring the heat from the woodburning oven. Nolan Davis was flicking imaginary specks of dust from the "Washburn II," the reproduction of the coach the Washburns once ran between Wawona and the Big Trees and which he had built from the wheels up.

Norm Messinger, Wawona Naturalist was in the wings, so to speak, preparing himself for the day. But it was Nolan's day, he'd lived with Washburn II since he shaped the iron for the wheel rims and shaved the first spokes. His coach, red with black and yellow and gold trim, sparkled in the barn.

The invited dignitaries, park officials, others involved with the foothill's history and park visitors were gathered under trees.

At high noon, Messinger began the ceremonies, introducing the Center's demonstration staff, and recalling bits of lore about the early days and anecdotes about the present.

"And, now we can see the product of seven month's work, of Nolan Davis' work . . . Washburn the second . . . bring her out, boys."

Helpers manhandled the coach out into the sunlight.

My, she was handsome!

Clay Maier hitched up the team as Messinger introduced the invited guests, who climbed aboard for the maiden trip. On this first and memorable ride were Mrs. William Sell, Jr., widow of Will Sell who once drove a stage for the Washburns, Mrs. George Crooks, Sell's sister, Cliff Harrington, President, Golden Chain Council, Hester Stephan, a descendent of the pioneer Bruce family, Bill Brown, President, Mariposa Historical Society, Mrs. Gladys Mee, daughter of Eddie Gordon, another old time stage driver, Shirley Sargent, writer and historian, Harry McKnight, President, Sierra Historical Sites Association, Bill Whalen, Deputy Superintendent of Yosemite, Dave Karraker, Chief Park Naturalist, and J. Nolan Davis.

When all were aboard, Clay released the brakes, clucked his tongue and away went Washburn II in a cloud of dust, down the road past the Wagon Shop, toward Stella Lake which once supplied water in the summer, ice in the winter, toward the mill where lumber for Wawona building was sawed, toward the misty gone-by days — days which are now being recreated so pleasantly in the Pioneer Yosemite History Center.

Nolan Davis, stage coach builder, sits tall in the seat when the Washburn II makes its maiden trip around the Pioneer History Center.

Interpretive Photo Seminars

The Y.N.H.A. will sponsor two five-day interpretive photographic seminars starting Mon., Oct. 23 through Fri., Oct. 27 and Mon., Oct. 30 through Fri., Nov. 3.

Howard Weamer, who will conduct the courses, has had ten years experience photographing in the Yosemite in all seasons. He knows the park intimately and is a keen observer.

The purpose of the courses is to teach the serious photographic amateur, or the professional, to see and understand the variety of Yosemite's environment and to record his observations on color film. This time of year will find Yosemite at the height of its fall coloring and especially rewarding photographically.

Classes will be held in the Valley and weather permitting, in the Crane Flat and Tuolumne Meadows areas.

While photography will be the medium by which the natural scene will be recorded, much of the field trip work and discussion will center around ecological considerations, focusing on the disparity between visual and natural relationships.

Each day will include two field trips, one early enough to capture the morning mists and frost, the other in the late afternoon shadows and colors, ending at dusk. Slide shows and discussions will cover some approaches to the Yosemite scene.

Pupils should be skilled amateurs, or professionals, familiar with 35mm color photographic techniques. Technical instruction will be limited, but will include study in such areas as pattern, motion, backlighting, closeup and landscape photography.

Tuition for the five-day course is $50.00 for members; non-members are welcome to join.

For further information, write us — Box 545, Yosemite National Park, California 95389 — or call (209) 372-4532.

Bulletin of the Yosemite Natural History Association
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P.O. Box 545, Yosemite National Park, CA 95389

A non-profit, educational association dedicated to the interpretation of the natural and human history of Yosemite National Park, in cooperation with the National Park Service. Contributions and donations are tax deductible.

The Noble Earthquake

On March 26, 1872, an earthquake centered in the Owens Valley spread death and damage and rocked much of the Sierra Nevada. Today's scientists estimate the "Inyo Earthquake" to have been equal or worse than the 1906 San Francisco upheaval, but there were no seismographs or Richter scales to measure its intensity.

A dozen or so winter residents of Yosemite Valley were jolted from their beds at 2:30 a.m. on that moonlit, tremor-hit night. Naturally, fear gripped them, but there was one man who ignored the thrust of panic to dash outside to observe, exult, and record the "noble earthquake!"

This pioneer "seismologist" was John Muir, 34, an earthquake among men, who had been living in Yosemite since 1868. His original theories on glacial action and preservation were beginning to rock the nation in published articles. His disregard for convention, his "soiled, ragged and button-less" state made him eccentric to Yosemiteites; by dawn of March 26 they called him crazy.

As winter caretaker, Muir was in Black's Hotel, near the base of Sentinel Rock, when roused from sleep. He ran out "both glad and frightened, shouting, 'A noble earthquake!' feeling I was going to learn something. The shocks were so violent and varied, and succeeded one another so closely, one had to balance as if on the deck of a ship among the waves, and it seemed impossible the high cliffs should escape being shattered."

A peak on the south wall of the Valley did not escape. By moonlight, Muir saw it falling in a "stupendous rock storm . . . It seemed to me that if all the thunder I ever heard were condensed into one roar it would not equal this rock roar at the birth of mountain talus . . ."

Eagerly, Muir ran up the Valley to "see the new-born talus," to climb over the huge, disrupted granite rocks that "were slowly settling into their places, chafing, grating against one another, groaning and whispering . . ." He noted the dust cloud, and the odor of crushed pines "from a grove that had been mowed down and mashed like weeds." His written observations were both sensitive and scientific. His documentation of the "birth" of talus was eloquent and historical.

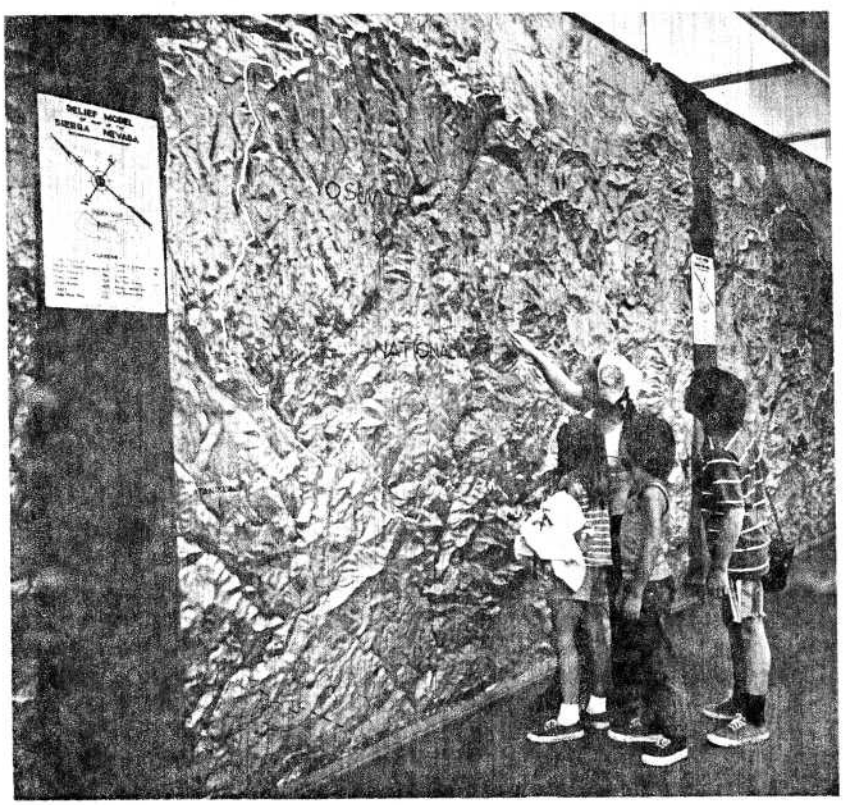
Later, he sauntered about and observed mankind's reaction. The Indians were "terribly frightened . . . fearing the angry spirits of the rocks were trying to kill them . . ." and the whites were "meditating flight . . ."

They were gathered in front of Hutchings' Hotel "shortly after sunrise . . . when a low blunt muffled rumbling, like distant thunder, was followed by another series of shocks, which, though not nearly so severe as the first, made the cliffs and domes tremble like jelly, and the big pines and oaks thrill and swish and wave their branches with startling effect."

Fear and solemnity stilled the men. Muir tried to cheer and tease by exclaiming, "Come, cheer up; smile a little and clap your hands, now that kind Mother Earth is trotting us on her knee to amuse us and make us good." His "well-meant joke seemed irreverent and utterly failed, as if only prayerful terror could rightly belong to the wild beauty-making business."

Two of the men fled, others stayed and trembled. For two months afterwards, Muir observed aftershocks in a bucket of water, exulting and using the knowledge of talus origin in his study of glaciers. "Earthquakes," he said, "have made me immensely rich."

We are indebted to Miss Shirley Sargent for this piece about "Muir's earthquake." Miss Sargent is well known as a Yosemite historian and chronicler of John Muir; she has done a number of pieces for the Y.N.H.A.



This wall-sized relief map of the Sierra has attracted many visitors to the Association quarters.

The Karraker family . . . Mary and Dave, with youngsters Nancy, David and Mariane. This photo was made in Washington prior to the Karrakers' move to Yosemite. The poodle was left behind.

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New Association Chief

terpretive program of today.

At Yosemite, we may be particularly proud of the magnificent variety of interpretive functions available to the visitor. People may choose between sketching walks, bird stalks, float trips, campfire programs, scientific discourses on geology and many other exciting programs.

Effectiveness requires a new emphasis and a special kind of attention so that true quality is uniformly available.

We are now involved in an in-depth evaluation of the various programs. We know we have some winners. We also know that to provide a brand of excellence over the years, we must assure the return of a quality seasonal staff each year. When we are reaching for high quality, the existing 50-60% turnover in staff in certain parts of the park is not acceptable. Added emphasis will be placed on careful recruitment and training. Also, we will provide a good quality program for the many types of visitors coming to the park. This will involve an extension of our own efforts to provide specialized interpretation for the handicapped, the Spanish speaking, scientists, hobbyists, the youth of today, little kids, history enthusiasts and everyone.

Great strides have been made in in environmental education through the work of John Krisko and the Yosemite Institute in this vital area. During the winter months a variety of interpretive ski and snowshoe trips, sensory winter explorations and art trips are planned.

The Yosemite Natural History Association is a major force in the effectiveness of these interpretive efforts. I am very pleased to be its new director.

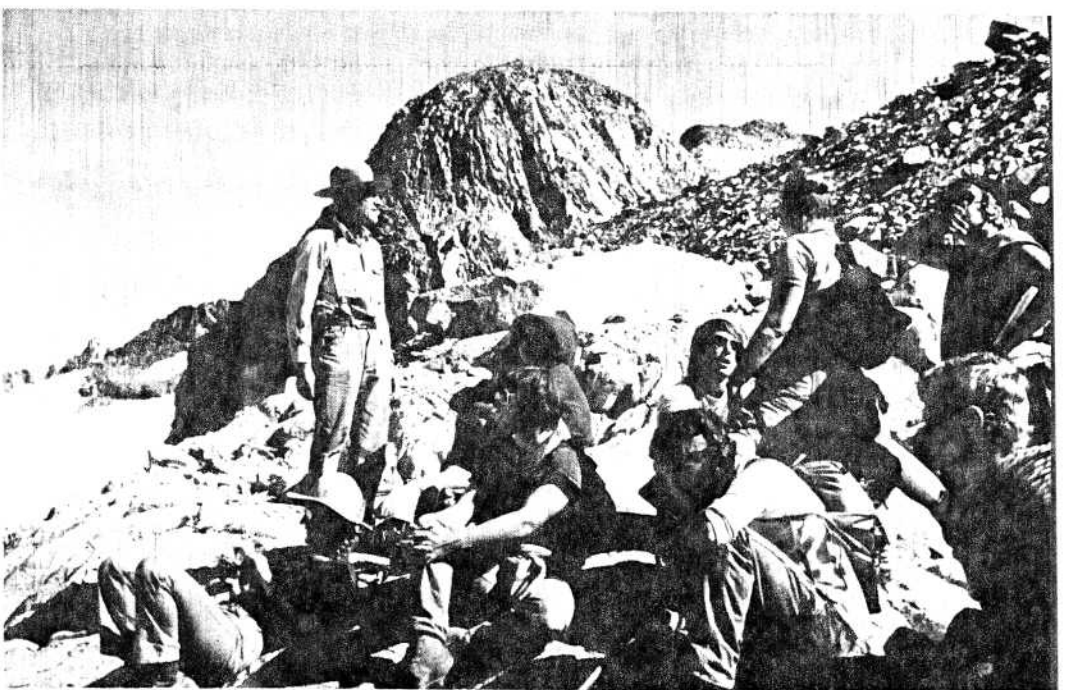
Seminar Enrollment

Enrollment in the summer field seminars grew from 80 in 1971 to 251 in 1972. This year, twelve classes in seven subjects were offered.

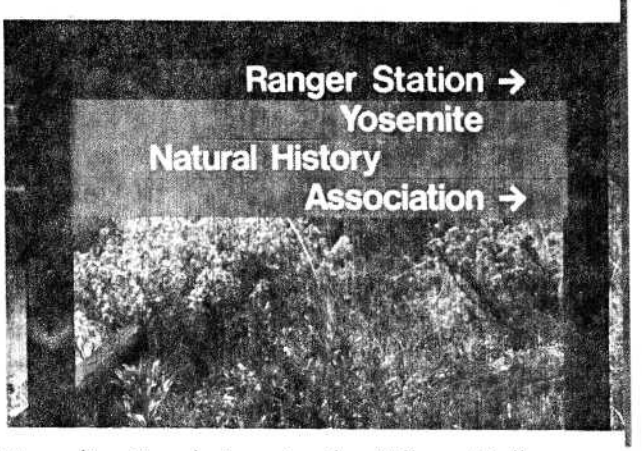
Enrollment by class:

Alpine Botany and Ecology (2 classes)	56
Wildlife and Ecology (2 classes)	36
Subalpine Botany and Ecology (2 classes)	49
Living Glaciers (2 classes)	44
Geology of Rock and Ice (2 classes)	35
Interpretive techniques (1 class)	19
Laboratory for Teaching (1 class)	12
	251

Of the 251 enrolled, 115 or 45% took courses for university credit. The Association sponsored 14 National Park Service interpretive people.



Members of a Glacier Field Seminar and the one and only Dr. Carl Sharsmith, class instructor.



New directional signs in the Village Mall point out the location of the Association office. Now that you can find us, come see us!

Crayfish Sightings

The December issue of the Quarterly Bulletin carried an account of two young Yosemite residents having sighted what appeared to be a lobster in the Merced River, in the Valley. On investigation by a naturalist, the creature was no longer where he had been seen, but several tube holes were found in the mud bank just above the water level. These are typical crayfish homes.

Since publication of the story, we have received two communications about crayfish sightings:

Ralph H. Harder, M.D., wrote:

"While not technically in the park, we spotted many crayfish in Big Creek as it flows through Camp Summerdale, immediately South of the South Entrance Station."

Robert S. Hart of Canoga Park, California wrote:

"My family and I have been visiting Yosemite for the past twelve summers, staying at Moore's Redwoods (Wawona). On this occasion, we had gone on a fishing/swimming outing to the above location. It is our practice to often use swim masks in the rivers to observe the fish, rocks, etc. My wife made the discovery in one of the pools of the creek. Although this had (and has been) our only such observance of crayfish in the park rivers, we knew that they are fairly common in California and were not aware of their apparent rarity within the park. However, all of us (5) saw it and there is no question about its identification. Hope this will add some to your information."

Thank you, crayfish-watchers-Ed.

Nature in Action

In the last issue of the QUARTERLY, Park Forester Lorne West described the infestation of the Douglas fir tussock moth in the white firs in the Mariposa Grove. Most of the trees attacked were white firs, a species living here in competition with the Giant Sequoia. Some of the primary findings are contained in this brief report prepared by West.

"Hello, Ranger!" "Remember us? We came back to see what the tussock moth has done to the fir trees here in the Mariposa Grove."

"If you don't mind, I'd like to walk around with you and have another look myself."

"Thank you, we'd like that. Have the moths killed any trees, as you had hoped? You said this was one of nature's ways of thinning the forest and lessening the competition between each tree so that those left would be healthier."

"Well, the moths killed from 600 to 800 trees, but not as many as we would have liked. It seems a natural control on the caterpillar has killed about 60% of the little creatures."

"Oh, that did happen? Last time we were here you said that a virus specific to the tussock moth caterpillar, if present, would control or reduce the caterpillar population and its effect on the trees."

"Yes, that's right. The virus dissolves the skin cells of the caterpillars causing them to fall and and stick to anything they land on. Look at this example — note how gelatinous it appears."

"This tussock moth is interesting. Are there any other insects in the Park which have a similar effect on other trees?"

"Sure. In and around Tuolumne Meadows, we have an insect called the Lodgepole Pine needleminer which has, in the past, created conditions where 80,000 acres of lodgepole trees have died, creating a phenomenon called the 'Ghost Forest'." "It takes three defoliations by the needleminer to cause a tree to die, fewer defoliations merely weaken it. Needleminer infestations are cyclic and occur on the odd-numbered years; another will occur in '73, then in '75. So, we can predict that trees attacked for the first time this year could die in 1975."

"Maybe if you are back someday we can talk more about the needleminer and the exotic disease, White Pine Blister Rust and why, in one instance, we let nature have her way while in another we may want to prevent nature from 'doing her thing'."

"Have a nice trip and we will see you soon."

Lorne West