

Yosemite

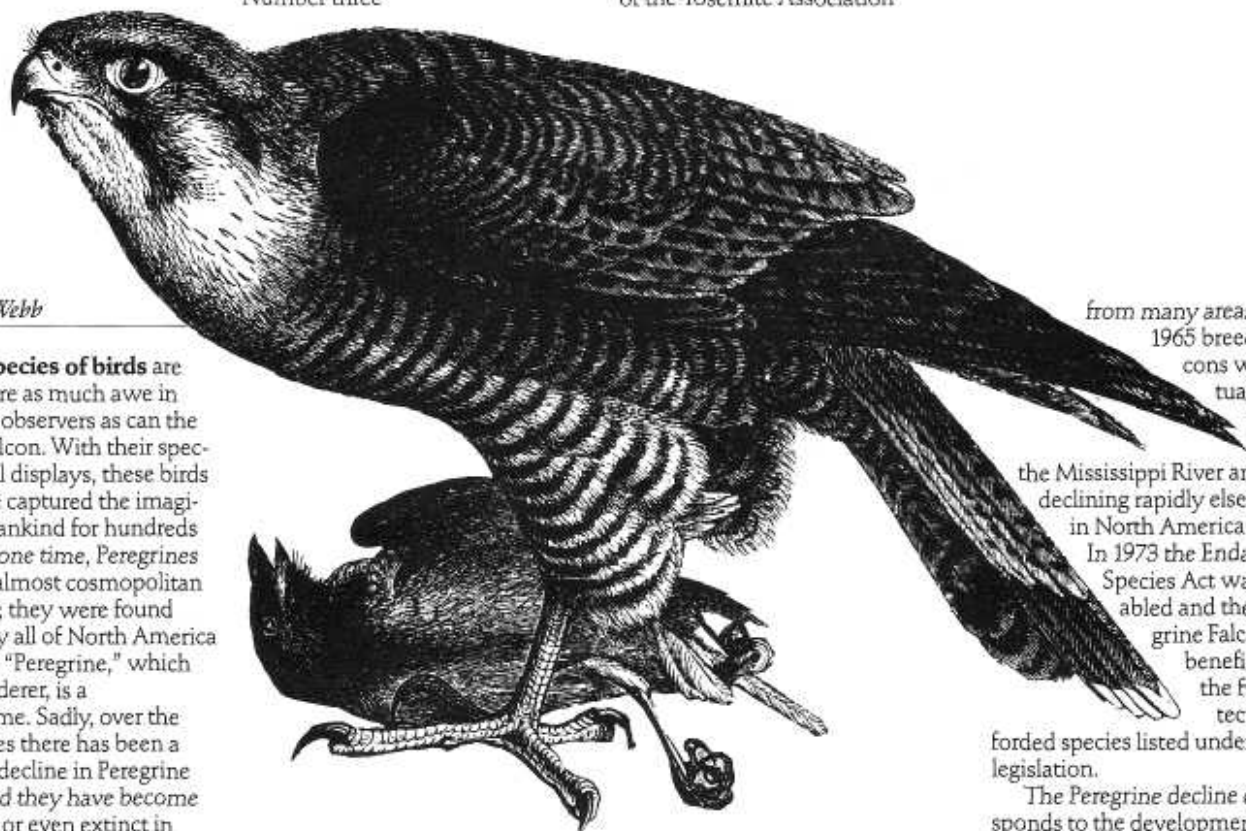
Volume Forty-eight
Number three

Published for Members
of the Yosemite Association

Michael G. Webb

Very few species of birds are able to inspire as much awe in the unaided observer as can the Peregrine Falcon. With their spectacular aerial displays, these birds have captured the imagination of mankind for hundreds of years. At one time, Peregrines enjoyed an almost cosmopolitan distribution; they were found across nearly all of North America and Europe. "Peregrine," which means wanderer, is a very apt name. Sadly, over the last 3 decades there has been a worldwide decline in Peregrine numbers and they have become endangered or even extinct in many areas. Here in Yosemite, we are fortunate enough to have 2 breeding pairs of Peregrines, the only known breeding pairs in the Sierra Nevada. Through the cooperative efforts of several organizations and agencies, we hope to restore this endangered bird of prey to all parts of its former range.

The Peregrine Falcon — approximately crow-sized — is a swift and formidable flier, often making tremendous dives from great heights (sometimes over 200 feet) in order to capture prey. Peregrines prey on what they can capture in the air, which is almost always some species of bird; however, they have been known to take an occasional bat, if one is wise enough to be flying about in the daytime. Prey species range in size from hummingbirds to quail and ducks, in fact, in some areas the Peregrine is commonly referred to as "Duck Hawk." The falcons are even able to capture



from many areas. By 1965 breeding falcons were virtually extinct east of the Mississippi River and were declining rapidly elsewhere in North America.

In 1973 the Endangered Species Act was enabled and the Peregrine Falcon now benefits from the full protection afforded species listed under this legislation.

The Peregrine decline corresponds to the development and use of DDT during World War II. This and other organochloride pesticides are persistent pollutants in the ecosystem and work their way up the food web until they accumulate in high concentrations in the tissues of predators. In Peregrines, the pesticides are converted into a metabolite called DDE which accumulates in the fatty tissues of the birds. During the breeding season, these fat reserves are heavily utilized by the adult falcons and in the female the poison interferes with her ability to deposit calcium in the eggshells. As a result, she lays eggs with thinner and thinner shells each year. This can result in egg dehydration, breakage or, as the pesticide load increases, direct

Target: 5 Falcon Families for the Park

swifts and swallows, which are highly adept fliers in their own right.

Peregrine Falcons mate for life and annually breed in the same territory. In Yosemite, the Peregrines have established El Capitan and the cliffs surrounding Hetch Hetchy reservoir as their breeding territories. The 2 Yosemite pairs of Peregrines are prime examples of what Peregrine enthusiasts have known for years — these birds have an eye for spectacular locations. The territory is very aggressively defended against any potential predators throughout the breeding season (March through June).

Peregrines will even chase off Golden Eagles, which are much larger and more powerful birds. It is a thrilling sight indeed to watch a pair of Peregrines incessantly dive on an eagle, as the big bird rolls over in mid-air to present its talons to the oncoming falcons. The adult Peregrines will continuously harass the intruder until it leaves the area. It doesn't take predators long to learn to avoid the cliff faces on which there are breeding Peregrines.

Pesticide Contamination

Beginning in the early 1950's falconers and biologists noticed that Peregrines were disappearing

Michael Webb is a Biological Technician in the Resource Management Division at Yosemite National Park. He is primarily responsible for the Peregrine falcon program in the park.

poisoning of the embryo.

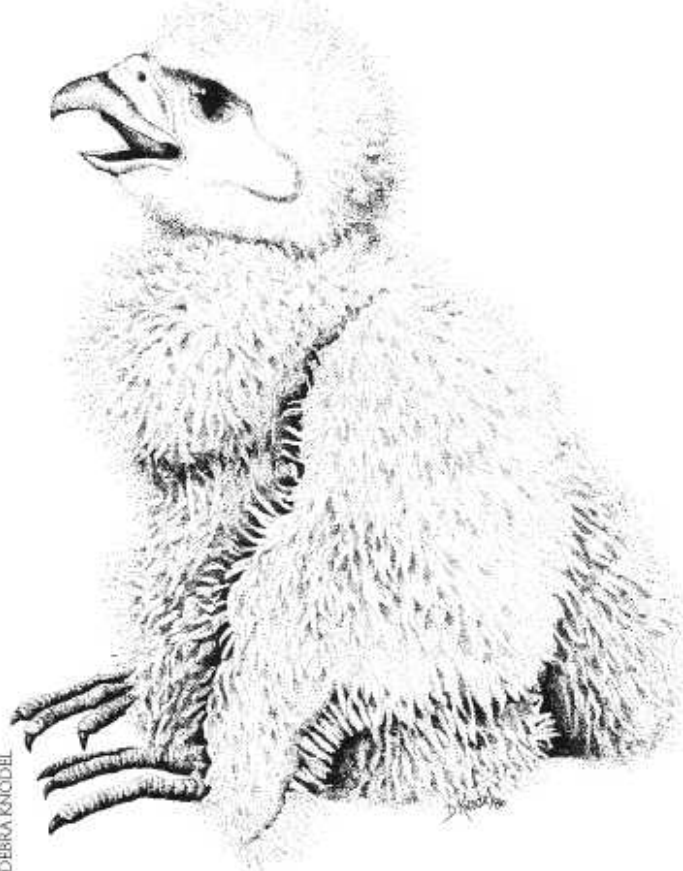
Research has indicated that 15% thinning of the eggshell is the critical level for survival of the young — below 15% the chance of survival is good, above 15% the prospects for survival are much reduced. In a relatively few years, the female may become so contaminated that she cannot lay viable eggs and, eventually, the adult birds may themselves die of the poisoning.

Sources of the pesticide contaminant are varied. Despite its use being banned in this country in 1972, DDT locally applied prior to the ban is probably still cycling through the ecosystem and adversely affecting the Peregrines as well as other species. Also, other organochloride pesticides which are widely used in agriculture today can break down into the same metabolite, DDE, that is poisoning the birds. Even now, DDT is still used as a component in some pesticides. In addition, DDT continues to be used in Latin American countries in malaria control, and Peregrine prey species that migrate from these areas are contaminating the falcons. The pesticide can even be carried by air and water and deposited in this country via aerial fallout. Although Yosemite National Park is an excellent preserve of Peregrine nesting habitat, the protection we provide can do nothing to solve the pesticide problems plaguing the falcons.

Manipulating the Nests

Historic information on Peregrine Falcon activity in Yosemite is sketchy and somewhat confused, but records found in the Yosemite Research Library show that, prior to the discovery of the falcons on El Capitan in 1978, Peregrines had not been confirmed breeders in Yosemite since nesting on Mt. Broderick in 1941, although incidental observations continued until 1949. Peregrines were probably never abundant in Yosemite — recent research indicates a historic population of 2 to 5 pairs. The 2 pairs that are now

DEBRA KNODEL



breeding in the Park are probably remnants of a much larger Sierran population.

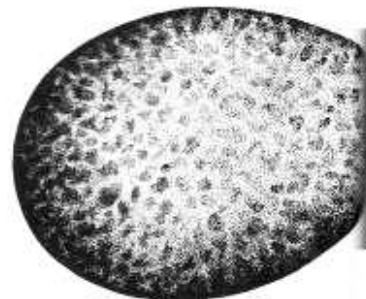
In 1978, after a nearly forty year absence, Peregrines were found to be breeding in Yosemite at El Capitan and they have occupied the cliff every year since. Twice since then (1979 and 1983) only one adult was present, presumably due to the death of its mate. In every other season, the El Cap falcons have fledged at least one young; however, in recent years they have needed a little human help to do so. In addition to protective closures of climbing routes that pass near the Peregrine aeries (they have used two different ledges on the cliff face), we began manipulating the nests, through a process called augmentation, in 1982.

Augmentation is a technique in which the wild Peregrine eggs are removed from the nest and replaced with either dummy eggs or young birds that have been hatched in captivity. Whether or not dummy eggs or young hatchlings are placed into the nest depends on the breeding chronology of the birds and if captive young are available at that time. If dummy eggs are used, the nest must then be reentered a week or

two later and the dummies are replaced with Peregrine hatchlings.

It has been a great help to our recovery efforts that the adult Peregrines will accept our taking their unhatched eggs (whether real or dummy) and replacing them with 2 to 3 week old nestlings. It must be quite a surprise to the parents to suddenly have these hungry and very demanding young mouths to feed, but we have yet to see the adults reject any of the fostered birds. In fact, they usually start brooding and feeding them within an hour of their being placed in the nest.

The augmentation of the El Cap aerie for the past 5 seasons has been necessary because this female has been laying excessively thin eggs (over 15%) since 1981. In 1981 her eggs were 17% thin. By 1984 her eggs ranged from 14 to 20% thinner than normal Peregrine eggs, and in 1985 things became worse when eggshells ranged from 15 to 26% thinner than normal. We do not yet have the eggshell analysis back for 1986 but we anticipate that the eggshells will be thinner still — only 2 eggs were recovered from the aerie (3 to 4 is normal) and both were already dead at the time of collection, presumably



from pesticide poisoning. Apparently, this female can no longer lay viable eggs. Despite this, she is still reproductively valuable in that she is an excellent foster mother and is much better at fledging and training young Peregrines than we humans would with our artificial methods.

Falcon of the Year

A second Peregrine aerie was discovered in the Park in 1981 at Hetch Hetchy reservoir. We don't believe the pair bred that year — the female was still in immature plumage — but they have successfully raised young, without any manipulation on our part, each year since then. In fact, this pair has been unusually successful, fledging 4 young birds in both 1984 and 1985. Four young is a very high success rate for American Peregrine Falcons in recent years. In fact, this was the only nest (out of 77) in California to fledge 4 young in 1985. Even more unusual is that in 1985 the female laid 5 eggs, an event not recorded in California since the 1930's. You can see why in the last 2 years we've taken the liberty to proclaim the Hetch Hetchy female "Falcon of the Year."

Nevertheless, these birds do suffer from some pesticide contamination. Eggshell thinning for this pair has been fairly erratic: in 1982 they averaged 13% thin; in 1983 the results showed an increase to 16.3% thinning; in contrast, the 1984 and 1985 analysis showed a decrease in the average thinning to 15.5% and 14.4% respectively. Their eggs are fluctuating right around the critical level. Despite this pair's apparent ability to hatch thin shelled eggs, we anticipate problems with them in the very near future and the need to augment their nest.

So far this year, the Peregrines have done pretty well. The 2 young that were placed in the El

nest on May 5th (one hatched from a captive-bred egg and one from a wild egg collected in Big Sur) have fledged and are rapidly becoming stronger fliers. As they chase their parents around the cliff face, they are learning how to perform high speed maneuvers and are developing their landing skills. As of this writing, we have seen 3 young in the Hatch Hetchy aerie, all in nearly full flight plumage.

A Goal of 5 Pairs

The success that we have enjoyed here in Yosemite with our Peregrine recovery efforts would not be possible if not for the cooperative and dedicated work of many individuals and organizations. Prominent among these are the employees of the Santa Cruz Conservatory Bird Research Group (SCPBRG), the western branch of the Peregrine Fund. The National Park Service contracts with the SCPBRG each year to provide nest attendants for our Peregrine pairs, to provide Peregrine nestings and conduct augmentation, to collect and analyze eggshell fragments and to band young birds in the unmanipulated nest. The SCPBRG has never been fully compensated for these services and in some years they have received no compensation at all. Their commitment and dedication is extraordinary and very much appreciated.

The Yosemite Association (YA) has also played a major role in helping out the Park's Peregrines. YA has twice provided funding through The Yosemite Fund for the Peregrine program when overburdened NPS budgets could not supply the necessary monies. The YA contributions were especially timely in that they came at a time when the SCPBRG was also facing financial difficulties and it was doubtful whether or not they could provide their essential services free of charge.

One of the recommendations to come from Peregrine research completed here in 1983 was for

the park to specify a goal of 5 breeding pairs of Peregrines within the Park boundaries. These birds would represent a core population from which the repopulation of Sierran California could occur as well as provide a "floating" population of young birds that would serve to replace missing mates from existing aeries. We have adopted this goal and wish to accomplish it through a Peregrine hacking program (release of captive-reared young without the benefit of adults present). Such a project would be expensive and not easily accomplished but its urgency increases each year as our existing Peregrine pairs accumulate poisons and, consequently, the chance of losing one or both

pairs increases.

The American Peregrine Falcon has made a tremendous comeback throughout its range since the late 1960's and early 1970's, largely due to very active recovery efforts worldwide. However, the species will continue to be threatened until pesticide contaminants are eliminated from their food web. When and if that time comes, "hands on" manipulation of breeding Peregrines will no longer be necessary and the falcons can be allowed to reproduce naturally. In the meantime, active management programs such as ours here in Yosemite will continue and hopefully provide opportunities for people to observe these spectacular birds of prey.

Bighorn Update

The herd of bighorn sheep that was reintroduced last March into Lee Vining Canyon on Yosemite's eastern slope is well and prospering. Although seven of the transplanted sheep have died from avalanches and other natural causes, at least eight new lambs were born in May, bringing the total of sheep above its original level.



The ewes and lambs have moved upslope somewhat, but are still within the canyon. The rams, however, are busy exploring the high ridges near the Sierra crest. Park researchers expected this dispersal by the rams, but were surprised and pleased to learn that two of the rams have already crossed the park boundary and are now denizens of Yosemite. It is the first time in some seventy years that the bighorn has been seen in Yosemite's high country. Appropriately, the rams were first glimpsed in the area of Sheep Peak across the crest from Bighorn Lake.

Harold Gilliam to Speak at Members' Meeting

Mark your calendars for the 11th Annual Yosemite Association member's meeting which will be held on September 20-21, 1986. Wawona will be the site of the gathering this year, and since the autumn weather in Wawona is somewhat less capricious than the autumn weather in Tuolumne, we expect that the season will provide a beautiful outdoor setting for our annual assembly. Those who were with us last year may recall that 4 days of snow and storms preceding the Tuolumne Meadows meeting had some of us in an outright panic



MICHAEL E. BRY

concerning plans and schedules.

Harold Gilliam, environmental columnist for the San Francisco Chronicle, will be our featured speaker. For over 30 years he has authored environmental treatises, books and articles, and is the recipient of a number of significant conservation and achievement awards. Mr. Gilliam is certainly one of the most well-informed people on environmental topics in California, and we look forward to hearing his remarks.

Further information concerning reservations and specifics of the meeting will be mailed to all members. Please call 209-379-2646 for details.

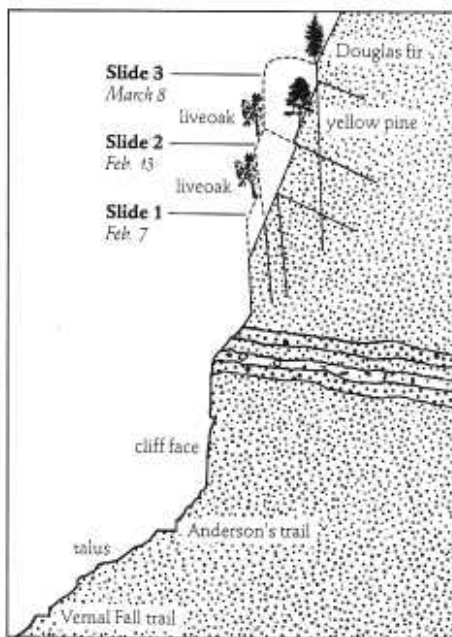
Anatomy of a Rockslide

Jim Snyder

Rockslides have not occurred very often in the last century on the foot trail from Happy Isles to the Vernal Fall bridge. Slides have occurred more frequently on the Mist Trail, the horse trail, and especially on what is now the foot trail from Vernal to Nevada Fall. Only two slides have been recorded as falling on the trail below the Vernal Fall bridge. An earthquake on May 25, 1980, shook a large block from the ridge above Sierra Point, destroying the trail to that point before it landed on the Vernal Fall trail. The second slide or series of slides occurred this past spring.

The trail itself tells the area's recent rockslide history. Much of the trail is hung on steep cliffs lacking the talus slopes of marked rockfall occurring on the opposite side of the canyon. The stretch of trail by the spring above Happy Isles bridges marks one fairly large talus slope showing rockfall from Grizzly Peak. The other talus along the trail is several hundred yards below the Vernal Fall bridge.

Rough cross-section of the slide area.



Look at the size of the trees growing along the Vernal Fall trail. Look at the lichen on the rock. Except for the new slides, there is little bright, freshly broken rock. In the human rather than geologic sense of time, rockslides along this trail are rare.

Rarity was overcome in a rush this past spring when three slides occurred at the same location within 30 days. Rock structure laid the groundwork for the slides. If you stand safely out of the way and look at the points of release from the Vernal Fall trail, you can study the rock and see a pattern of fracturing resembling the illustrated cross section.

The predominant rock is what geologists call Half Dome Granodiorite. It is certainly massive, though the mass at the point of the slide is underlain by strata of thin layers of chemically more diverse rock shown across the

1. The release point of the Feb. 7 slide is in upper left center just above the thinly stratified rock crossing the picture. The dark splotch on the release point is a mat of liveoak roots left from a tree that came down in the slide. Liveoaks at the top of the release point were active agents in producing the second slide.

upper center of photograph #1 and the lower center of photograph #3. The slope of the rock face and of the long slip joint lying underneath the failed blocks is about 70°, dipping sharply south toward both river and trail. Another plane of fracturing shows in the remaining roof of the slide in photograph #2 dipping gradually north away from the river. And there is a series of vertical joints as well. This complex system of fractures, greatly oversimplified in the illustration, means that the rock has little to hold it in the long sense of geologic time. Other forces and gravity work slowly to chip away at the mass, converting it to talus along the Merced River at this point.

While the action of the slide is set in the rock structure itself, several other agents work on that structure to make parts of it fail and fall. One agent is vegetation and another is water. Earthquakes can play a role in widening fractures, but they have rarely been the direct, immediate cause of Yosemite rockslides.

Masses of rock move along the great joints shown at every turn in the trail. The movement often leaves cracks. Water washes

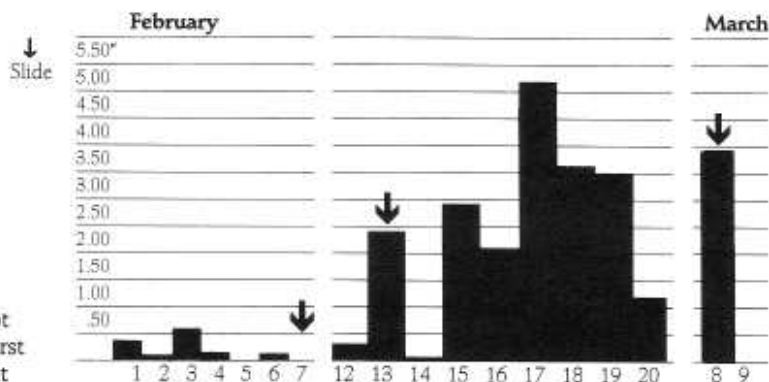
soil and debris into the cracks which many plants then pioneer. The canyon liveoak is particularly fond of rocky places and thrives on the soil and water supplies provided by cracks in the granite mass. Pines and firs will also take advantage of the cracks and can thrive if the sources of life are generous enough for them in such ordinarily inhospitable places.

A tree sprouts in a crack and sends its roots down for nutrients and water. The roots work slowly to expand some cracks and often travel hundreds of feet down inside the rock. Cracks trap soil, and trees generate more soil. Water flowing off the slick rock saturates the soil in the joints which act as deep wells for plants that otherwise would have little indeed to live on.

Liveoak roots are the toughest of all, forming thick mats in the cracks. The dark mass on the release point shown in photograph

2. The release point of the Feb. 13 slide shows the three major planes of cross-jointing. The fir at upper left and the small pine on the right contributed to the third slide. Lighter streaks on the fresh rock are calcareous deposits from water seepage.





#1 is one of these liveoak root mats. Liveoaks initiated the first slide by loosening a block that was foundation for several blocks above it. The trees' search for maintenance, in other words, is their undoing, and their living is the source of their demise.

The second agent is water which can affect joints and cracks in several ways. Granites weather very slowly by water. Joints may be very fine at first, hardly even visible, yet water will slowly weather the chemical weakness there, dissolving elements of the rock slowly over time to open the joint.

Water also works as ice. Freezing and thawing expands cracks and slowly widens joints. When this process is compounded by deposited soil which acts as a great sponge, widening can be increased. Remember, however, that this process occurs in geologic rather than human time.

The release point of the March 8 slide is at upper center, capped by the remaining hundred ton block. The ragged edge especially at left center shows one of the broken connecting points. The bright rock surfaces dipping sharply toward the lower show how gravity was favored.

Once a crack is filled with roots and soil, water can act in other ways. Soil in the cracks can become so saturated that the weight of material in the cracks and pressures on any weak block are greatly increased. Larger amounts of water also sharply reduce the friction supplied by the debris in the joints, putting greater stress on remaining connections in the rock itself. Especially in situations with sharply dipping joints which leave few natural ledges for blocks to rely on, larger amounts of water in the joints grease the skids for weakening and failure. This is just what happened to cause the Vernal Fall trail slides.

Rainfall in Yosemite Valley during February and early March helps show how the slides occurred (see chart). There was not that much rain or freezing before the first slide. But the liveoaks growing over the poorly supported small block had loosened

it enough that the light rain probably provided some of the push needed to break it loose. The first block fell at 1:20 p.m., Feb. 7.

That first slide removed much of the toe or foundation from the blocks above it. The piece that fell was thicker at top than bottom, a fragment formed by the intersection of the vertical with the south dipping joints shown in the illustration.

With foundation gone and water pouring through old weathered cracks up to a foot wide and filled with roots and soil, the second block of some 1,200 tons broke loose about 4 p.m., Feb. 13. The new roof clearly showed the structure of the remaining rock and the causes of the slide. Most of the joints had weathered, and there was little to hold the block in place. In fact the whole block had dropped about a foot and broke off just the remaining rear portion before falling. That remainder is the triangular piece at left center in photograph #2. This slide buried the trail in big blocks, tearing out many trees to make this once again a "new" and ac-

tive, rather than old and stable, talus slope. For the first time in over a hundred years, the trail was hit by a major rockslide.

This second slide was followed by a period of heavy storms with widely fluctuating snowlines. That snow would fall in the Valley at one point, changing to rain to 8,000 feet within hours, meant increased water flow off the slickrock and additional stress along well-jointed rock.

Climbers from NPS Search and Rescue, Jerry Wieczorek and Chris Alger from the US Geological Survey, and I checked the remaining block on March 6. We saw slight movement there and, most important, some fine, fresh stress cracks along the top of the block. These, along with a very wide joint at the rear of the block and its position on a steeply dip-

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4. Rock was piled on the trail up to 12 feet deep after the third slide. In fact, there was no trail left.

5. This block just east of the second release point shows a vertical fracture generated by the March 8 slide. Two smaller onionskin fractures work in from the edge of the rock at right. In the lower left corner are some of the roots from the small yellow pine. This block, already weakened, supports several others above it.



JIM SNYDER/NPS

JIM SNYDER/NPS

The Yosemite Association's New Home

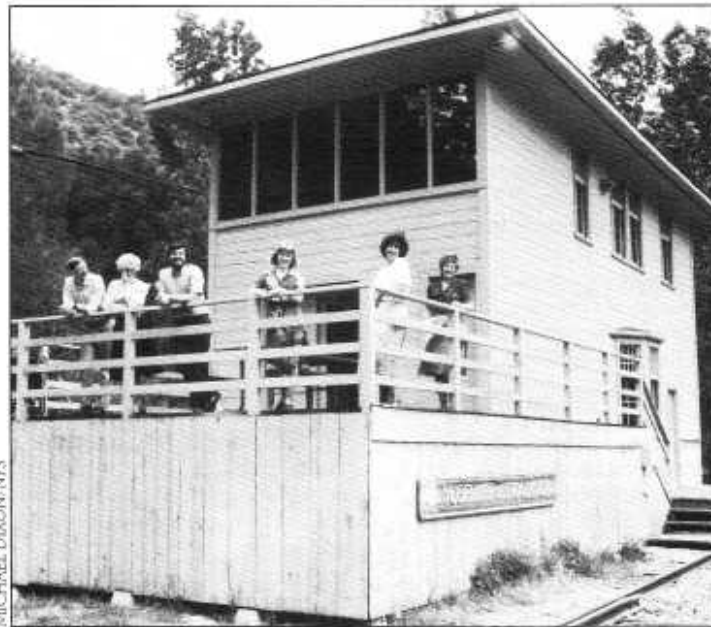
Henry Berrey

After some sixty years of wandering, the Yosemite Association has found a place to call home. On March 20, the staff moved bag, baggage and computers from its Valley District Office to fine new quarters in the handsomely restored Bagby Railroad Station in El Portal.

The path to an adequate workplace has been a twisty one. Competition for space has been severe, as the National Park Service people, too, have been stuffed cheek to jowl in their offices and are forever in need of more room. Whenever an area has become vacant, an N.P.S. administrator has pounced on it. To compound the dilemma, the Association over the years has occupied a less-than-potent place in the Park's pecking order.

During the Association's hunt for housing, Bagby was considered, but without much enthusiasm, a Valley site felt to be

Henry Berry, *Managing Editor of the Yosemite Natural History Association for 15 years, is now a special consultant to the Association.*



MICHAEL DIMONINIS

preferable. Nothing there became available, so in mid-1985, plans were made for the renovation of the station. Now it's done, well done and humming with the Association's activities.

The Association offices, high-ceilinged and many-windowed, occupy both floors of the Bagby Station. Rich Reitnauer, sales

manager and Pat Wight, his assistant, take care of bookselling matters on the first floor, shared with Mary Kate Dwire who handles memberships. What was the station's passenger waiting room is being restored to its original condition with a long, pew-like bench, a potbellied stove and an ornate hanging chandelier.

On the upper floor, Pres. Steve Medley presides, Linda Abbott performs secretarial duties, and Claire Haley does her bookkeeping and office managing. Penny Otwell directs field seminar activities, Jane Loach does the cashiering and Karen Cobb keeps the records for the fundraising campaign. So, after all the years of being homeless or hopelessly overcrowded, the Association now has an attractive and functional place to carry on its business . . . that of providing aid to Yosemite, to the National Park Service and to park visitors.

The Yosemite Valley Railroad Company built the Bagby Station in 1907 as a stop on the run between Merced and El Portal. Hitherto, Yosemite-bound travelers journeyed to the Valley via stagecoach, a long and dusty trip. Now, they could travel in relative comfort along a scenic route which followed the Merced River. The eighty-mile trip took about four hours and a round-trip ticket cost \$18.50, including a twelve-mile stage ride into the Valley.

Floods destroyed much of the roadbed several times and the

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How We Came to Be Where and What We Are!

With great help from Research Librarian Mary Vocelka, we set out to locate the places where the Association may have hung its hat. This led into all sorts of NPS

files and reports, going back to the early twenties. From these, and Carl Russell's *One Hundred Years in Yosemite*, the birthdate of the Yosemite Natural History Association could have been 1923, '24 or '25; generally accepted though is 1925. YNHA's parent body, the Yosemite Museum Association first saw the light of day in 1920, '21 or '23.

About this time, throughout the Service, there was a growing interest in broadening visitor education programs in the parks. Yosemite ranger Ansel Hall, along with others, laid plans for a Yosemite museum. Aided materially by a grant of \$50,000 from the Laura Spellman Rockefeller Memorial Fund, in 1924 a museum was planned and two years later was opened, perhaps the

finest such facility in the Park System.

Earlier, in 1918, attention was directed to training naturalists with the formation of the Yosemite Field School of Natural History. This apparently emerged from the Service's admiration for the study done by Mr. and Mrs. C.M. Goethe of outdoor education programs in Europe. Goethe later arranged for Dr. Harold C. Bryant of the California Department of Fish and Game to head a visitor education program in Yosemite and elsewhere in Sierra tourist areas. NPS Director Stephen Mather, enthused about the program, hired Bryant and UCLA colleague Dr. Loye Miller to expand the Park's naturalist programs. Out of this, grew the Field School where aspiring nat-

uralists were trained in the somewhat new notion that the study of living things should be conducted in their natural environments rather than in laboratories.

The Field School training, incidentally, was not dissimilar to the Yosemite Association's present field seminar programs which have provided so much to so many since 1970.

Upon its organization in 1925 a Board of Trustees defined the purpose of the Yosemite Natural History Association and, while the articles may have been refined over the years, are still the policy guidelines. The founders were naturalist Bert Harwell, painter and writer Della Taylor (Mrs. Herman H. Hoss), painter Harry C. Best, Yosemite physician Dr. Hartley Dewey and U. S. Mag-

Chevron USA Donates \$250,000



THE YOSEMITE FUND



At ceremonies in Washington, D.C., in late May, representatives of Chevron U.S.A. presented National Park Service Director William Penn Mott with a check for \$250,000 to benefit Yosemite National Park. In recognizing the vital need for private funding to support America's parks, Chevron President James R. Sylla emphasized the importance of assistance for protection and preservation of wilderness and wildlife.

"Conservation of our wilder-

Mr. Steven P. Medley
Yosemite Association
P.O. Box 230
El Portal, CA 95318

Dear Steve

As a result of Yosemite Association's request and Chevron's interest in the environment and its concern about Yosemite National Park, we wish to make a \$250,000 grant to the Yosemite Association for use in the following actions:

Mirror Lake — \$106,000 to fund the Yosemite National Park request to reestablish a more natural environment surrounding Mirror Lake. The Park's project covers removing most of the paved road and all of the paved parking lot, developing trails to keep visitors in limited walking areas, establishing a picnic area removed from the main viewing area, and revegetating with native plants. As you have discussed with the Park Service, the San Francisco Conservation Corps will perform the majority of the basic labor, which will be paid for from this grant. Coordination with the Corps calls for this project be implemented during September/October of this year.

Great Grey Owl Research — \$103,000 to fund Yosemite's proposed research project on this California endangered species. This is a four-year

project which we understand the Park wishes to start immediately. Chevron is very interested in endangered species, and our expert in this field, Pat O'Brien, plans to visit this project on an informal basis as the research proceeds. You and the park personnel have met Pat and seemed comfortable when he mentioned this earlier.

Fund Raiser Poster — The balance of the grant to develop, print and distribute a poster which would be provided to the general public to encourage individual contributions to the Yosemite Fund. The Yosemite Association could keep this activity going as long as it generates an adequate flow of contributions. We will work to get this project on its feet, including providing advertising support.

Steve, we are really pleased to be a part of the restoration of Yosemite and we are particularly excited about the specific projects. Enclosed is our check for \$250,000.

Sincerely,

J. Lynn Maddox
Chevron USA, Inc.

ness and wildlife is an obligation, not a luxury. If we fail to meet this responsibility, all of us will lose something irreplaceable," said Sylla in reference to the Chevron gift to The Yosemite Fund.

Chevron's support will be directed to two specific projects. This fall, work will begin to reestablish a more natural environment around Yosemite's famed Mirror Lake, which will include removing obsolete facilities and revegetating the area with native plants. The second is research designed to halt the decline of the Great Grey Owl, an endangered species in California. Most of the remaining birds in the state occur in the Yosemite region.

Yosemite Association President Steve Medley observed, "We are most appreciative of Chevron's assistance on these two projects which are high on our list of actions necessary to keep Yosemite the very special place that it is. Chevron U.S.A. is to be commended for the leadership role it has assumed in the private sector and for the example it is setting for other corporations and businesses."

trate J.M. Oliver.

That the Association did succeed the Museum Association is verified in a report by Judge Oliver, prepared evidently in an attempt to unscramble the YNHA's somewhat vague background. He wrote: "... there existed a kindred organization [the Yosemite Museum Association] purporting to be its [YNHA's] predecessor, which said organization becomes important because from the loosely and entirely inadequate and imperfect data... it appears that our organization is the successor to the former organization." Despite an apparent lack of conviction, the judge concluded that YNHA is a legitimate offspring of the Museum Association. He evidently had the lawyer's nose for

detail, for he wrote in connection with a financial transaction "A small discrepancy [in an interest account] is accounted for by \$216.85 in interest, which said interest account should have been \$216.54."

Prior to 1970, YNHA had no place to call home, it was wherever the Chief Park Naturalist happened to have his base. Though there always was a Board of Trustees, decisions generally were made by the Chief, the perennial Big Brother of the Association.

In 1970, Chief Naturalist Bill Jones hired a managing editor for the Association; for him he found an empty desk in Park Headquarters. The other staff member worked in the book storage room. Very shortly, the M.E. was

relocated to the storeroom when his desk was reclaimed by its NPS owner.

In 1971, what had been the 'geology room' in the Valley District Building was vacated. The YNHA staff, now three in number, moved in. It was grand, but short lived, moving out in 1972. The room was to become the Indian Cultural Museum. Back in the cold with nothing in sight.

The north side of the Valley District Building had for years been either an exhibit area or a storage place for unwanted odds and ends. It was thirty feet long and twelve feet wide with a deep, overhanging roof. It looked like the last chance. With the help of Assistant Superintendent John Good and Chief Naturalist Dave

Karraker, a deal was struck. The ends and the side of the area were enclosed to make a not half-bad office. For a few years it was adequate, but when the staff reached its present size, conditions became intolerable and probably in violation of OSHA workplace regulations. But, the staff carried on, buoyed up by the anticipation of something better, which was finally realized with the move to the Bagby Station.



New "Underwater" Archeological Discoveries at Lake Eleanor

Scott L. Carpenter and
Laura A. Kim

A team of National Park Service archeologists completed the recording of a prehistoric Indian campsite situated 40 feet beneath the surface of Lake Eleanor, and finished the day as dry as a bone. How did they manage that?

The opportunity to conduct this "underwater" archeological survey presented itself when the City and County of San Francisco's Hetch Hetchy Water and Power Division, which operates both the Hetch Hetchy and Lake Eleanor reservoirs, proposed to drain the reservoir to its natural lake and stream levels in order to repair cracks in the dam face. Staff of the Yosemite Archeology Office spent approximately ten days surveying the dry reservoir bed in October of 1985.

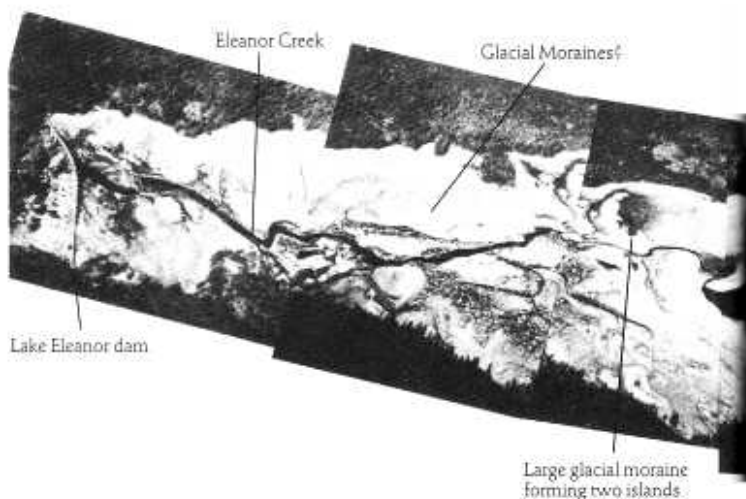
Situated just inside the northern boundary of Yosemite National Park, the Lake Eleanor Valley was a popular summer and fall home for both the Central Sierra Miwoks and the Owens Valley Paiute from east of the Sierran crest. In historic times, at least two settlers homesteaded there; Kibbe Creek is named after Horace J. Kibbe who settled there

in the mid-1800's. There are even tales of cattle ranchers who ran stock in this once-lush valley. Now Lake Eleanor is a popular destination for backpackers, fisherpeople, bald eagle watchers, and many more.

Constructed in 1917, the Lake Eleanor reservoir was designed to supply power for construction of the O'Shaughnessey Dam at Hetch Hetchy Reservoir. Both reservoirs are part of a larger network that supplies domestic water and power for the City and County of San Francisco.

Getting to see the original Lake Eleanor topography, while the reservoir is drained, is a rare opportunity—happening only once in every 20 to 30 years. The timing of the October project was critical, requiring careful logistical planning to survey the approximately 350 acres of land before the fall and winter storms inundated the reservoir bed.

The field team of archeologists systematically walked over the entire area searching for clues of any prehistoric or historic period occupation or activity. Because of the configuration of the natural lake and surrounding feeder streams, there is a relatively limited amount of silt deposited on



the floor of the reservoir, and of course, there is no vegetation to obscure one's view of the ground. Hence, many features and artifacts of cultural sites can still be found in place on the reservoir bed. The archeologists were able to locate numerous bedrock mortars (used by the Indians to grind acorns and other plant materials), stone tools and arrowheads, and remnants of various historic structures.

Upon location, each site was temporarily marked with a large black plastic cross so that it could be easily identified by a passing helicopter to aid with mapping and aerial photography. A surprising result of the aerial photography was the discovery of at least four recessional moraines left by the glaciers that carved the Eleanor Creek valley.

After the initial location of the cultural sites, the archeologists revisited every site to record and map each one. Each feature was photographed, and collections were made of selected artifacts



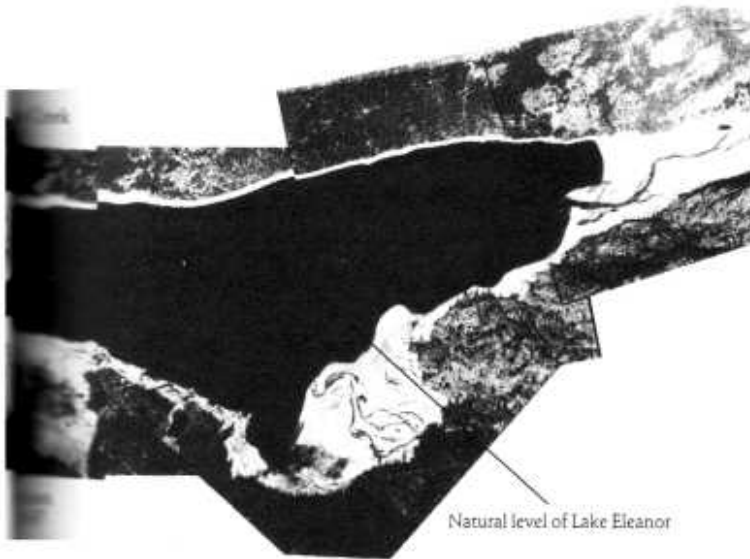
that might yield more information about the age and function of the sites.

Within days the reconnaissance fieldwork was completed and the reservoir level began to slowly rise. All of the data collected were processed and analyzed, and the historical information of the Lake Eleanor area and the construction of the dam was examined and summarized. The



Scott Carpenter is the Yosemite National Park Archeologist and Co-Director of the Yosemite Research Center. Laura Kim is a Staff Archeologist in Yosemite.

A photo-mosaic aerial view of Lake Eleanor showing the natural lake level, Lake Eleanor dam at the far left; the lighter colored area is the reservoir bottom. This composite was produced to aid in the location and mapping of the archeological and historical sites along Eleanor Creek.



Natural level of Lake Eleanor



Top: Cribwork abutments of historic bridge that once crossed Eleanor Creek below the natural Lake Eleanor. Left: Rock-lined well at what was probably the homestead of Herman Wolfe, mid-1800's.

Yosemite Archeology Office will complete a detailed report on the project this year.

Archeologists from the University of California at Berkeley conducted a similar but more

basic archeological survey in 1956 and recorded 16 prehistoric Indian sites, most of which cluster around the original stream banks and lakeshore. The 1985 survey covered more terrain and recorded a total of 29 prehistoric and historic cultural sites, at least 24 of which are new discoveries.

One large village site was found to have nine bedrock mortar outcrops, with over 100 mortar cups, along an area at least 250 yards following the bank of the original Eleanor Creek. In addition, numerous small village or large camp sites were recorded. These sites also cluster along the original waterways. Most of these sites contain bedrock mortar outcrops and obsidian and chert stone tools. Preliminary artifact analysis indicates that some of these sites may date back at least 1500 years.

The archeologists also located the site of one of the sawmills used during the clear-cutting of the reservoir basin in 1917. This site is still marked by large piles of sawdust that have not yet eroded away under the approximately 30 feet of water that usually covers the area. Homesteading activity of the 1800's is obvious from cabin foundations

and a rock-lined well. Also recorded was the original dam at the mouth of Lake Eleanor, constructed of v-notched logs milled on-site.

Due to the relatively intact state of these cultural sites, future research possibilities at Lake Eleanor are great. Given more time to conduct future fieldwork, archeologists will be able to more completely document these sites and conduct limited subsurface test excavations. In the meantime the National Park Service needs the assistance of the public to preserve these fragile sites in place — to allow all of the features and artifacts to remain where they

Below: Mortar holes in granite outcrop (foreground) at original lakeshore. Bottom: V-notched, pegged log cribwork at early dam, circa 1917, on mouth of original Lake Eleanor.

can be interpreted in their original context. Too often, as the water level of Lake Eleanor recedes through its seasonal course, sites become exposed to relic collecting and vandalism.

As the information analysis for this project is completed we will begin to see a better picture of what life was like in the Lake Eleanor valley during the past 2000 years. When the data is added to the cultural resources database for the rest of Yosemite, we will have the opportunity to further our knowledge about occupation and trade throughout the Sierra Nevada, as well as the complexities of natural resource utilization by prehistoric and historic inhabitants. It makes us wonder about the secrets that lie beneath the Hetch Hetchy reservoir.



Summer Books of Interest

The following selection of books are works which chronicle the wide and varied scope of Yosemite and the High Sierra region, or the national parks generally. All can be purchased from the Association at the Yosemite Valley Visitor Bookstore, or by mail order, using the order form on page 14 of this issue. Members of the Association are entitled to a 15% discount off retail prices.

Pages of Stone:

Geology of Western National Parks & Monuments.

2: Sierra Nevada, Cascades and Pacific Coast.

Halka Chronic.

The Mountaineers, Seattle, 1986. (#14735) \$14.95.

Author Halka Chronic believes science is fascinating, fun and should be presented in simple language for everyone. This book is number two in a series of 4 geology guides for hikers and car-travelers covering the Western United States. Chronic maintains that "geology is scenery; lovely to look at, but also a vivid portrayal of the story of our planet." The book begins with a brief, painless mini-course in basic concepts of geology, and the author then takes the reader on a geologic tour of the parks and monuments and introduces each with basic facts. Next, key geologic attractions are pointed out and explained with the aid of photographs, maps and easy-to-understand diagrams. (170 pages).

Adventures of a Mountain Man:

The Narrative of Zenas Leonard
Written by Himself, Edited by Milo Milton Quaife.

University of Nebraska Press, 1978. (#5090) \$6.95.

Created from the original manuscript of Zenas Leonard, the narrative chronicles his adventures from 1830, when he left his family's home in Pennsylvania to participate in an expedition across the Rocky Mountains, to his return home in 1835. It provides a

New Publication

Faces in All Kinds of Places

A Worm's-Eye View of Flowers.
Michael Elsohn Ross.
Yosemite Association, 1986. (#385) \$4.95.

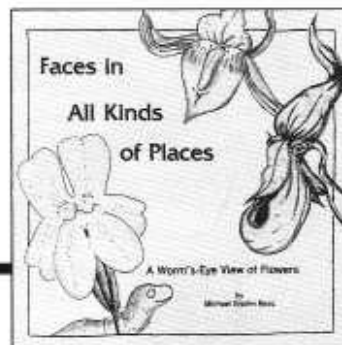
This latest book offering from the Yosemite Association was developed for a younger audience. In this delightful story, children of all ages are introduced to the world of flowers through the

trustworthy account of Rocky Mountain trapping of that period and also includes his experiences with the Walker expedition from Salt Lake to California for a possible glimpse of Yosemite Valley in 1835. Depicting the love of adventure for its own sake and a pride in advancing the westward march of the American people motivated Leonard and his companions. The stories later thrilled and fascinated all who heard them, and the repeated telling led an enterprising small town newspaper editor to publish Leonard's carefully written manuscript in both his newspaper and in book form. A fascinating slice of history from our western United States history. (274 pages).

Timberline:

Mountain and Arctic Forest Frontiers.
Stephen Arno.
The Mountaineers, 1984. (#17205) \$9.95.

Timberline — where the trees end — is a biological boundary visible to even the casual traveler throughout North America. Where highways or hiking trails ascend to upper timberlines, visitors see patchy forest and meadows give way to stunted trees and finally to mere shrub-like trees and tundra. This book describes what timberlines are and why they exist, and what human uses have been made of the timberline environment. It surveys tree species and conditions of individual North American timberlines — in the Pacific Coast, Great Basin, Southwest



eyes of a curious worm as she explores her rooftop. Scientific concepts, language, and facts are presented with simple text, engaging fantasy and whimsical illustrations. Parents, teachers and young readers will find "Faces" easy to understand and fun to read.

and Mexican mountains; in the Rockies and Northern Appalachians, and in the arctic — with reference to timberlines worldwide. (304 pages).

The Big Oak Flat Road to Yosemite

Margaret E. Schlichtmann and Irene D. Paden.
The Awani Press, 1986. (#6210) \$8.95.

Winner of the prestigious Commonwealth Club Award in 1955 for contribution to California history, this publication presents the story of the freight route from the "loading levee" in Stockton through to the Southern Mines and on to Yosemite, and the early white families living "along the route." Almost everything headed to the mines, to the families of Knights Ferry, or on to Yosemite, came by boat to Stockton and was loaded into the great wagons for the journey over the Big Oak Flat Road. The route was the life line for those along its way as well as the path of anticipation and discovery for those hardy world travelers eager to see for themselves the wonders of Yosemite. Meticulously based on interviews, questionnaires and letters, the authors present a factual account of the once-lively settlements, the people and the events of that era in the history of the Big Oak Flat Road. Although replaced with a modern paved highway, many of the places described may still be located and, within Yosemite, provide great hiking routes. (356 pages).

National Park Guide

Michael Frome
Rand McNally & Co., 1986. (#15125) \$9.95.

Beginning with a foreword by National Park Service Director William Penn Mott, Jr., this 20th anniversary edition highlights 48 national parks (including Yosemite) and includes information on 300 other properties managed by the National Park Service. As thorough as ever, Rand McNally has published a guide for the traveling public, providing clear basic directions, practical information, advice and recommendations. The guide notes the best recreations, attractions, camping and nearby points of interest. If you are looking for a guide to national parks, Rand McNally sets the standard in the field. Includes full color maps and photos, and sources for additional information if needed. (248 pages).

Western Forests

The Audubon Society Nature Guides.
Stephen Whitney.
Alfred A. Knopf, New York, 1985. (#5840) \$14.95.

This 671-page guide is designed for use both at home and in the field. Clearly arranged in four parts — habitat essays, color plates, species descriptions, and appendices — it puts information at your fingertips that would otherwise only be accessible through a small library of field guides. You will discover the many kinds of forest habitats, the relationships between plants and animals there, and highlights not to be missed. The color plates, each a clear illustration of its subject, feature woodland and forest settings and over 600 photographs of different plant and animal species. Information provided about a plant or animal includes a description, the range, specific habitat and comments. The appendices include a bibliography, a glossary, and a comprehensive index. The book even provides suggestions for optimum use in home or field!

Hydromantes in the Rocks



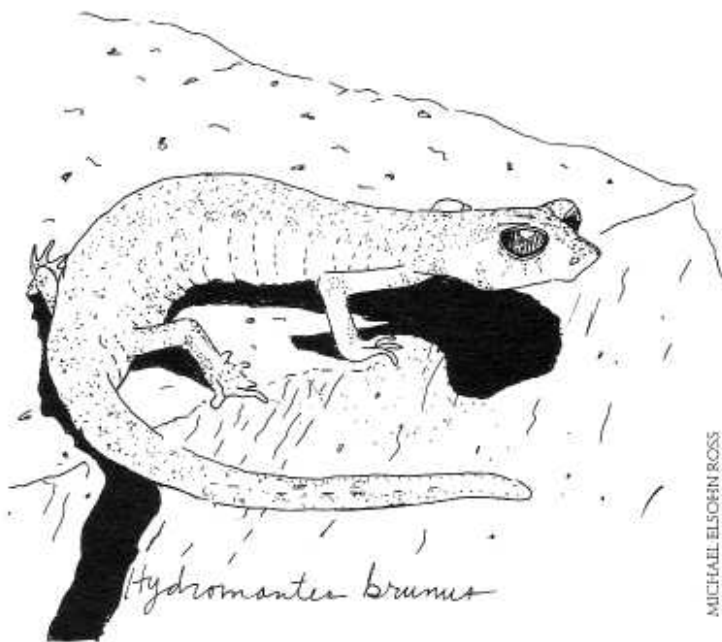
Michael Elsohn Ross

Somewhere in the rocks right curled up in caves, crevices, and talus slopes are comfortable Hydromantes, Sierra salamanders. While outside the temperature might be a searing 100 degrees plus or the sun might be scorching living things with intense ultraviolet rays, Hydromantes stay cool.

On my most recent quest for Hydromantes, I scrambled up a black, dried oats-covered hillside, almost wilting terminally along the way. Heat waves shimmered over skeletons of last spring's wildflowers, yellow star thistles scoured my bare legs, and my temporal artery thudded dully. Finally I reached relief, a limestone cave. A cool breeze flowed out of this cave mouth and I soon immersed myself in this oasis of shade and darkness. Inside the cavern, water dripped off rounded calcite formations which in some places undulated like green tissue. Branching miniature forest covered other surfaces. Bats chattered as they swooped overhead and between pillars. With my flashlight I probed damp places, but I found no salamanders with webbed feet and mushroom tongues. I found no salamanders at all. I wasn't expecting to find them though. Hydromantes are found in very few places.

On July 18, 1915, no Hydromantes had ever been found in North America. A species in Sarawak and another in the French Italian Riviera, both cave dwellers, were the only ones known to science. Charles Camp, member of Joseph Grinnell's first Yosemite Survey, found two unusual looking salamanders in a mousetrap about 1 mile below the Mt. Lyell Glacier at 10,000 ft. Grinnell called it the "mountain event" of the survey. No salamander had ever been found at such a high elevation in North America.

The Mt. Lyell salamander (*Hydromantes platycephalus*), which



MICHAEL ELSOHN ROSS

looks like a slimy piece of crawling granite, belongs to a large family of lungless salamanders (Plethodontidae) all of which breathe through their moist skins. As Sierran mountaineers know, alpine sun is not kind to skin, yet this creature can survive by habitating cool, moist sanctuaries in rock. Being a Hydromantes, it also possesses characteristics unique to that genus. Each Hydromantes has a mushroom-like tongue capable of extending a third of its

body length to zap insect prey. They have webbed toes and distinctively flattened bodies, both adaptations to a life of crawling in crevices. Hydromantes are alone among western salamanders in using their tails as climbing aids as they free climb cliffs and walls of caverns.

The Mt. Lyell salamander was thought to be the only North American Hydromantes for years until the Shasta and Limestone Salamanders were discovered. On February 24, 1952, Joe Gorman, a Berkeley zoology graduate student, was returning from a trip to Yosemite where he had collected data on a new site of the Mt. Lyell salamander. He and his wife, Gerry, stopped near Briceburg on Route 140 near the Merced River and, after turning some rocks as all herpetologists do, found a Hydromantes. Instead of being granite colored, it was brown above and orange cream below and bigger than Mt. Lyell salamanders. It was found in an area of limestone bedrock and thus named the Limestone Salamander (*Hydromantes brunus*).

In 1953, Gorman came across a third Hydromantes in limestone caves near Mt. Shasta at 2,500 feet. The Shasta Salamander is

reddish-to-beige above and often has a yellowish tail. Until last summer, these were the only Hydromantes known in North America. Then, on June 25, 1985, Ted Pappenfuss of Berkeley's Museum of Vertebrate Zoology and Robert Macey, a Santa Cruz undergrad, on a search for slender salamanders on the east side of the Sierra found instead a flat one. This new Hydromantes, which is even flatter than its nearest relative, the Mt. Lyell salamander, lives in an unlikely habitat of desert scrub and volcanic rock near a small stream in the vicinity of Independence, California. This as yet unnamed salamander is colored a greenish-lichen-blotch hue above and is flecked with silver below.

It would indeed be easy to go through life on this planet without ever encountering a Hydromantes. I have yet to have the pleasure. Physically, they are not as impressive as a Sequoia with which they have some things in common. Both the plodding Hydromantes and the towering Sequoia are relics of a warmer, moister age and both have somehow survived in scattered populations. The Sequoia group survives in China and California, and Hydromantes have made their last stand in Southern Europe and the Sierra Nevada where they survive in moist oases in the midst of seasonally hot and dry environments.

Sir Charles Lyell, for whom Mt. Lyell and the salamander are named, would have been intrigued by the mysteries of Hydromantes. How did these small reclusive creatures become so distinct in their distribution on this planet? Why did they survive in such seemingly limited and harsh

continued on page 12



Michael Elsohn Ross has authored several books published by the Association, is an accomplished naturalist, and teaches many outdoor classes for us. He is responsible for the clever line drawings illustrating the text.

Rockslide

from page 5

ping plane, suggested where the break would occur. We determined to monitor the cracks. Only two days later during another heavy storm, the third slide occurred bringing down another 1,600 tons of rock and clearing away most of the precarious overhang. This last block had been held solely by its western connection, roughly eight feet square, not far from the stress cracks and the heavy rain reduced the friction enough that the connection could not hold; the block swung down, snapping its connection.

As it fell, the block slid and bounded along the steeply inclined plane, landing first on the small bench formed by more finely stratified rock. There the impact left a considerable crater and broke the block up further to increase its impact on the talus below. Impact also knocked out a smaller block below the thin strata, and that may provide now a new roof for future slide activity. Impact in the talus moved an additional 2,000 tons of rock downslope, forming a huge talus gully and burying the trail location up to 12 feet deep, shown in photograph #4.

Because it was next to the river, the trail could be easily cleared by blasting. Checking the new release point confirmed suspicions that the slide activity was not yet over. A hundred ton block perched at the top of the release point had moved slightly and showed some new cracks along its base. Roots behind remaining slabs suggested that remaining connections were often only at one end, leaving gravity the upper hand under the right conditions.

As the last slide fell, its falling put stress on surrounding rock. We could track that stress and see where it was likely to produce future slides. Photograph #5 shows a rock just left of the small liveoak on the right side of the release point shown in photograph #3. The rock cracked and moved about one quarter inch on March 8. Two smaller cracks show the work of that onionskin

Jim Snyder is a trail-crew foreman in Yosemite whose park interests are diverse and multiple. He is a regular contributor to this publication.

Hydromantes

from page 11

habitats? Why are they the only genus of lungless salamanders in the old world? Lyell, whose revolutionary book, *Principles of Geology*, inspired Darwin and his theories of evolution, would have looked for geologic clues to these questions. However, he would probably be as baffled as modern day scientists who are using theories based on continental drift and glaciation to explain how *Hydromantes* ploddingly dispersed and mysteriously became separated. Using biochemical analysis, it has been estimated that European and Sierran *Hydromantes* have been separated 30 million years (distant cousins indeed!) This date does not fit well into the time frame of any of the dispersal/separation theories and so the mystery lives on.



Hydromantes geniv *Hydromantes italicus*

weathering pattern common to many rocks. This rock, however, is a large part of the support for blocks above it. When it falls, its failure will duplicate the situation of Feb. 7 by leaving a roof with several less supported blocks over it. Slowly, or maybe quickly, the slides will work up to the hundred ton block which will then crash to the talus below.

This slide sequence may also move the instability a little further east, opening new weak points along those sharply dipping joints. Among other things, this means that the rock structure is complex enough that no human effort can effectively stabilize the remainder. Taking one block down would only weaken other rock sections and create an endless and impossible maintenance task.

This situation posed a problem for the trail below and the



It is thought because of certain primitive features that the limestone salamander is most closely linked to the ancient *Hydromantes* from which the others evolved. Deep in the past, *Hydromantes* might have been living from North America across Asia to Europe. When climatic conditions dramatically changed, only populations in suitable environments survived. Thus, relic populations adapted to changing conditions in their particular environment and now, presto—we have 6 unique species. Perhaps out there in other unlikely places, other mutated *Hydromantes* remain undiscovered.

On this planet where continually changing environments have wiped out 9/10 of all life forms, these flattened bug zappers have survived. Now their only current threats are changes created by "Lord Man" as John Muir, the Sequoia's savior, called us.

thousands upon thousands of people who use it each year to see Vernal and Nevada falls. Once the rains were over and temperatures rose, danger of another slide decreased. Modification of the slides' release points was out of the question and the trail's great popularity eliminated closure as an unenforceable option.

Consultation with Service officials and the Department of Interior Solicitor led to a plan for the trail. Recognizing that "tort claims are the cost of doing business in a national park," the Park Service has to make "every reasonable effort"—"reasonable" is a key word—to tell visitors about potential hazards in the park. Knowing the rockslide potential, Service personnel also have to monitor the slide area. Normally trailhead signs warning of these hazards would be enough, but, because this trail is so heavily

New Home

from page 7

automobile became popular, resulting in the railroad's financial collapse in 1945. When the line was abandoned, a Mrs. Della Gress bought the Bagby station and set up housekeeping. There she lived until shortly before the waters of the upstream Exchequer Reservoir lapped at her doorstep. She sold out to the Merced Irrigation District.

Meanwhile, Chief Park Naturalist Doug Hubbard had laid plans for an elaborate transportation museum at El Portal, plans which included the Bagby Station. Through the YNHA, the station was acquired in 1966 and moved to dry ground in El Portal. There it sat neglected, the plans for the museum having bogged down in money shortage problems. Despite its formerly forlorn condition, it has been designated as an historic structure on the National Register. Its new utilization as offices should benefit both the building and the Yosemite Association.

used, often by novice hikers, the Solicitor also recommended signs at the slide area itself. These signs specific to the hazard, state

Caution Active Rock Slide Area No Stopping Next 150 Yards

I walk through the slide area nearly day and watch people passing through it. Most pay little attention, but some become acutely aware of what the rough trail means. One gentleman from England asked about the slide as he looked up at the marked fractures. After hearing a little about how it all happened, he exclaimed, "It's simply majestic as many others scurried around us. He sensed for a moment the crash of breaking rock, the smother of grinding granite boulders, at the instant in which great falling weight made another forceful landscape change.

THE Yosemite

CATALOG

National Park Wit:

Fun Discovery Game on America's Great National Park Sites.
(#4475) \$6.00.

This game was designed to test your knowledge of America's great national parks. It is especially fun if you have visited places like Yosemite or Yellowstone or the Grand Canyon. There are only 48 national parks, but the National Park Service manages more than 330 other sites, including national monuments, lakeshores, seashores, historic sites, and more. Some questions are simple, a few are tricky, many have built-in clues and most all will tell you something you may not have known before. Each card has a color photograph of a national park location on the front and two sets of questions and answers on the back; the cards are packaged in a hard plastic container.

The Crocker Art Museum Commemorative Puzzle:

The Grand Canyon of the Sierras — Yosemite.
(#4460) \$5.00.

Produced by The Crocker Art Museum for their centennial celebration, May 18–25, 1985, this jigsaw puzzle is a detail of the painting, the Grand Canyon of the Sierras — Yosemite, by Thomas Hill in 1871. A view from the old Inspiration Point area, it is a full color scene of Yosemite Valley. The pieces number 208 and the finished size is 21½ inches by 17½ inches.

Yosemite National Park

Yosemite Valley Jigsaw Puzzle.
(#4465) \$8.95.

This puzzle is for the more experienced "puzzler," contains over 500 pieces, and is reproduced from a topographic map prepared by the U.S. Department of Interior, Geological Survey. If you thought your topo map was something of a puzzle out on the trail, try it in your living room! Conquer new heights, improve your map reading skills, and learn your way around Yosemite Valley and surrounding peaks at the same time—you'll be ready for your next hiking trip! 16" by 20"

when completed, it covers the area from Bridalveil to Half Dome in authentic topo map colors of browns and green.

YA Products

Pelican Pouch

Wilderness Belt Bag
(#1690) \$11.95.

The Pelican Pouch is not only perfect for carrying field guides, but also offers instant access to all the small items that are usually buried in your pack—pocket camera, lenses, maps, or your favorite trail mix! The Pouch is

YOSEMITE
National Park · Jigsaw



Museum —
THE PUZZLE

(tail) by Thomas Hill, 1871

The Yosemite CATALOG

designed with front snap fasteners on the straps. This allows comfortable positioning on your belt—even between belt loops; no need to take your belt off first. The material is high quality Cordura pack cloth. It has a waterproof coating on one side and should not be dry cleaned or machine washed—most surface soil may be removed by gently brushing with mild soap or detergent and rinsed with a damp cloth. Beige with the dark brown and white Yosemite Association patch, the Pelican Pouch measures 8 × 5 × 2½ inches.

The Yosemite Fund Mug (#1626) \$5.00.

This is the first time that this item has been offered to our membership. The cup is decorated with the newly-designed scratchboard logo by Larry Duke of San Francisco for use in conjunction with Yosemite Association's fund-raising effort, The Yosemite Fund. Need a useful conversation piece with potential for meaningful

conversation? This is it—and this is the only place it is available. White with black design, 8 ounce capacity.

Yosemite Association Cap (#1600) \$5.00.

Complete your outdoor wardrobe with this trendy item from the Association collection! It's the perfect hat for a hot, sunny day in the great outdoors—mesh fabric to keep a cool head, a generous bill to shade your face, and adjustable strap in the back to insure a good fit for everyone. All of this plus the Yosemite Association patch to let everyone know what your favorite organization is! Brown with white accent.

Yosemite Association Mug (#1625) \$5.00.

A new addition to our product line is this white ceramic mug with our logo and name imprinted in brown. Distinctive and functional, the mug holds 8 ounces of your favorite beverage.



Yosemite Association Decals and Patches

Our association logo, depicting Half Dome is offered to our members in these two useful forms. Help announce your affiliation with our organization to others by purchasing and using Yosemite Association patches and decals. Patch \$1.50; Decal \$1.00.



Yosemite Association T-Shirt

Comfortable, heavy quality, 100% cotton Hanes "Beefy-T" shirts are printed with the Yosemite Association's handsome Half Dome logo on front. Children's sizes are available in short sleeve; adult sizes in short and long sleeve.

Color: Tan with brown emblem. *Child sizes (short sleeve):* small, medium and large \$6.00. *Adult sizes (short sleeve):* small, medium, large and extra-large \$8.00; *(long sleeve):* small, medium, large and extra-large \$10.00.



Order Form

Quantity Ordered	Item #	Description	Price Each	Total
Subtotal:				
Less 15% Member's Discount:				
Subtotal A:				

Ordered by: _____
 Name: _____
 Address: _____
 City: _____ State: _____ Zip: _____
 Membership Number: _____

Yosemite Association, P.O. Box 230, El Portal, CA 95318

Quantity Ordered	Item #	Description	Price Each	Total
<i>Members' discounts are not applicable when purchasing the following items.</i>				
1650		Y.A. T-shirt Childs Lg. short sleeve	\$ 6.00	
1650		Y.A. T-shirt Childs Med. short sleeve	\$ 6.00	
1650		Y.A. T-shirt Childs Small short sleeve	\$ 6.00	
1675		Y.A. T-shirt Adult X-Lg. short sleeve	\$ 8.00	
1675		Y.A. T-shirt Adult Lg. short sleeve	\$ 8.00	
1675		Y.A. T-shirt Adult Med. short sleeve	\$ 8.00	
1675		Y.A. T-shirt Adult Small short sleeve	\$ 8.00	
1680		Y.A. T-shirt Adult X-Lg. long sleeve	\$10.00	
1680		Y.A. T-shirt Adult Lg. long sleeve	\$10.00	
1680		Y.A. T-shirt Adult Med. long sleeve	\$10.00	
1680		Y.A. T-shirt Adult Small long sleeve	\$10.00	
		Yosemite Association Decal	\$ 1.00	
		Yosemite Association Patch	\$ 1.50	
Subtotal B:				
Merchandise Total (Subtotals A + B)				
6% Sales Tax (CA customers only)				
Shipping charge				\$ 1.50

Total enclosed

Jon Brian Kinney 1946-1986

Interpretive programs

reached and enriched the lives of thousands of visitors to Yosemite. He eagerly shared his ideals and his passion for Yosemite, evoking in participants a sense of place and capturing their commitment to help care for it. He sparked their sense of wonder and kindled their imagination; his style warmed and his wit delighted those he exposed to Yosemite's distinctive attributes and spiritual qualities. Engaging life zestfully, he savored his own park experiences and invited others to share the personal bond he felt for the special values embodied in national parks. He was committed to interpretation, and he relished opportunities to practice and promote it.

Well known for the enthusiasm, sense of humor and dedication he displayed in his interpretive activities, National Park Service Interpreter Jon Kinney died May 11 of injuries he



sustained in an automobile accident on Highway 41 south of the park on the night of May 6. Jon was returning home from Fresno when his car collided with a vehicle that had overturned moments earlier. He succumbed without regaining consciousness. He was 39.

About 160 people attended a memorial service at Wawona Point in the upper Mariposa Grove May 14. Held in the Society of Friends tradition, the gathering was a moving and eloquent tribute to Jon's life.

A native of Massachusetts, Jon had worked for the National Park Service since 1972. Besides Yosemite, his assignments included North Cascades, Denali, Glacier Bay, Grand Canyon, Indiana Dunes and Bandelier. He also performed brief stints in parks in England, Scotland, New Zealand, Australia and Canada. At the time of his death he was a subdistrict interpreter in the Wawona District, responsible for supervising summer interpretive operations at Glacier Point and winter activities at Badger Pass.

Jon is survived by his wife, Jeri

Andrews of North Cascades National Park; his parents, Betsie and Herb Kinney of New York; a grandmother, Ethel Kinney of Massachusetts; and a sister, Katie, now working in Great Smoky Mountains National Park.

At his family's request the Yosemite Association has established the Jon Kinney Memorial Fund. Gifts to this fund will benefit the Yosemite Research Library, an appropriate beneficiary in view of Jon's love of books.

Donors may send contributions to **Jon Kinney Memorial Fund**, Box 545, Yosemite, CA 95389.

Jon's death leaves a significant void in the Yosemite family. The indelible dimension he added to visitors' experiences, the emotions he stirred, the insight he provoked, the perceptions he imprinted, the vigor he personified, the love he conveyed, his drive, his spirit—those were his trademark; they are, as well, his legacy.

New Members

We would like to welcome to the Yosemite Association the following persons who became members in the past three months. Your support is greatly appreciated.

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Madotte Anderson, Laurel Anderson, Herb Andrews, Peter B Arnold, Estene Marie Azevedo, Mr & Mrs Frank Barford, Keith Barnett, Christine Bennett, Rodney A Beaty, John Bennett, Aynsley Cameron Bell, Mr & Mrs Walter Bell, Barbara Berggreen, Mrs & Harriet Bigelow, Phillip & Anne Biles, Janina Rago & Hill Horn, David L Branson, Shirley Brey, Ron Brey, Richard Briscoe, Ada & Sidney Brownell, Elizabeth Buist, Daniel Buch, Mr & Mrs George Capelle, Anne Cavaroc, Michael & Sherry Chandler, Mei Chiu, George Caldwell, Christine Dunham, Don & Mary Joann, Mr & Mrs Michael Cogley, Mrs Jean Cognata, Dan Condron, Mr & Mrs Ellsworth Conner, Mrs Joan Cope, Janice Costella, Roberta Cook, Carolyn & Pete Courture, Mrs Cassland, Gerald J. D'Onofrio, Mrs Dumas & Darleen Spencer, Mrs & Paul Dato, Paula Davis, Joe DeGiano, Mr & Mrs Robert Dillon, Mrs DiSalvo, Arleen & Harvey DeSalvo, Elaine Dunkelmann, Alice & Robert Eckert, Rob & Julie Edwards, Mrs Emanoan, Max & Carol Egan, Thomas Enright, Siran Diane Egan, Mame Fancett, Marty

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Join the Yosemite Association

You can help support the work of the Yosemite Association by becoming a member. Revenues generated by the Association's activities are used to fund a variety of National Park Service programs in Yosemite. Not only does the Yosemite Association publish and sell literature and maps, it sponsors field seminars, the park's Art Activity Center, and the Ostrander Lake Ski Hut.

A critical element in the success of the Association is its membership. Individuals and families throughout the country have long supported the Yosemite Association through their dues and their personal commitments. Won't

you join us in our effort to make Yosemite an even better place?

Member Benefits

As a member of the Yosemite Association, you will enjoy the following benefits:

- ☆ *Yosemite*, the Association bulletin, published on a quarterly basis;
- ☆ A 15% discount on all books, maps, posters, calendars and publications stocked for sale by the Association;
- ☆ A 10% discount on most of the field seminars conducted by the Association in Yosemite National Park;
- ☆ The opportunity to participate in the annual Members' Meeting held in the park each fall, along with other Association activities;

☆ A Yosemite Association decal; and

☆ Special membership gifts as follows:

Supporting Members: Matted print from an illustration by Jane Gyer in "Discovering Sierra Trees";

Contributing Members: Full color poster of Yosemite's wildflowers by Walter Sydorak;

Sustaining Members: Matted color photograph of a wildflower by Dana Morgenson;

Life Member: Matted color photograph by Howard Weamer of a Yosemite scene; and

Participating Life Member: Ansel Adams Special Edition print, achivaly mounted.

Membership dues are tax-deductible as provided by law.

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Moving?

If you are moving, or have recently moved, don't forget to notify us. You are a valued member of the Association, and we'd like to keep in touch with you.

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