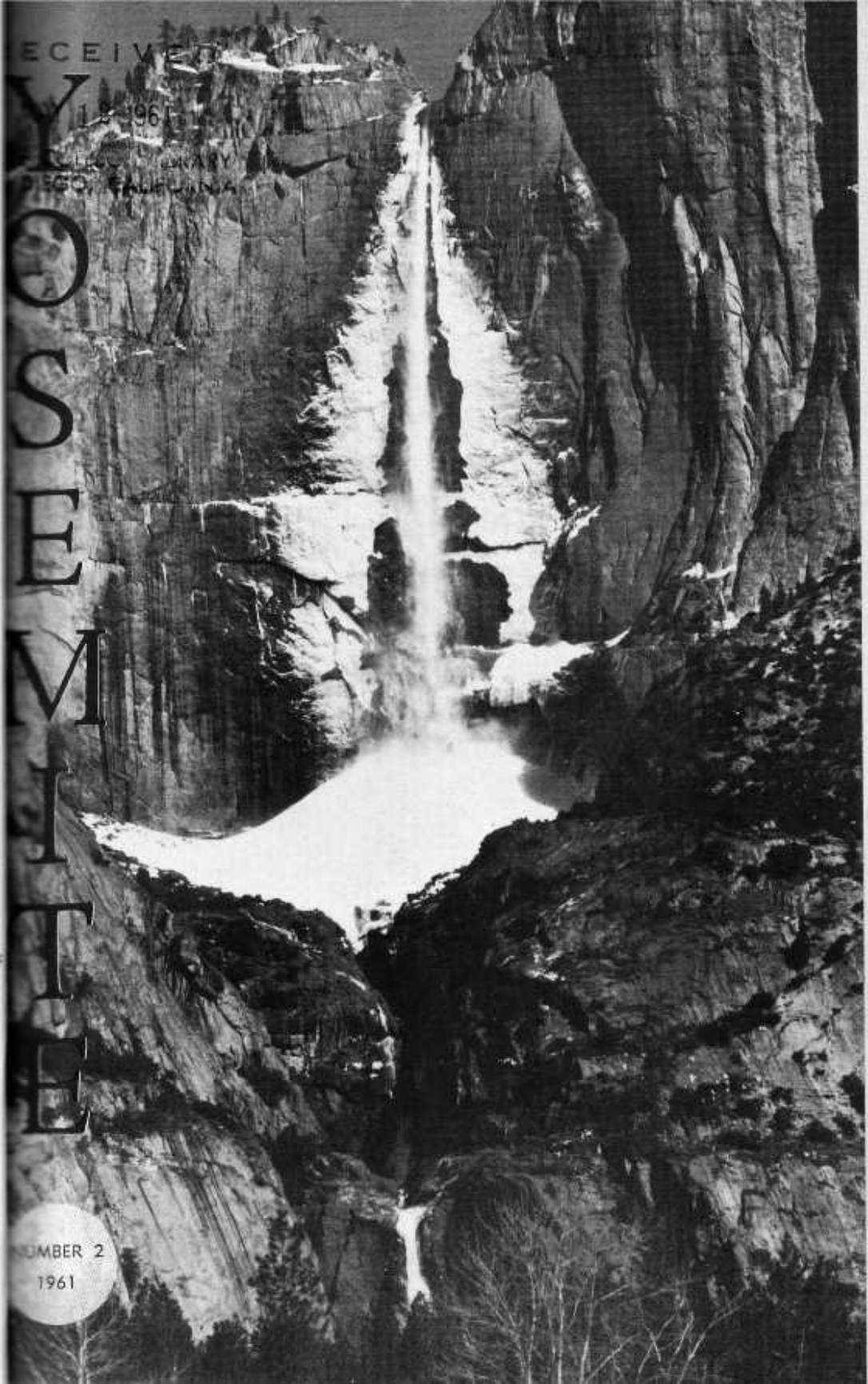
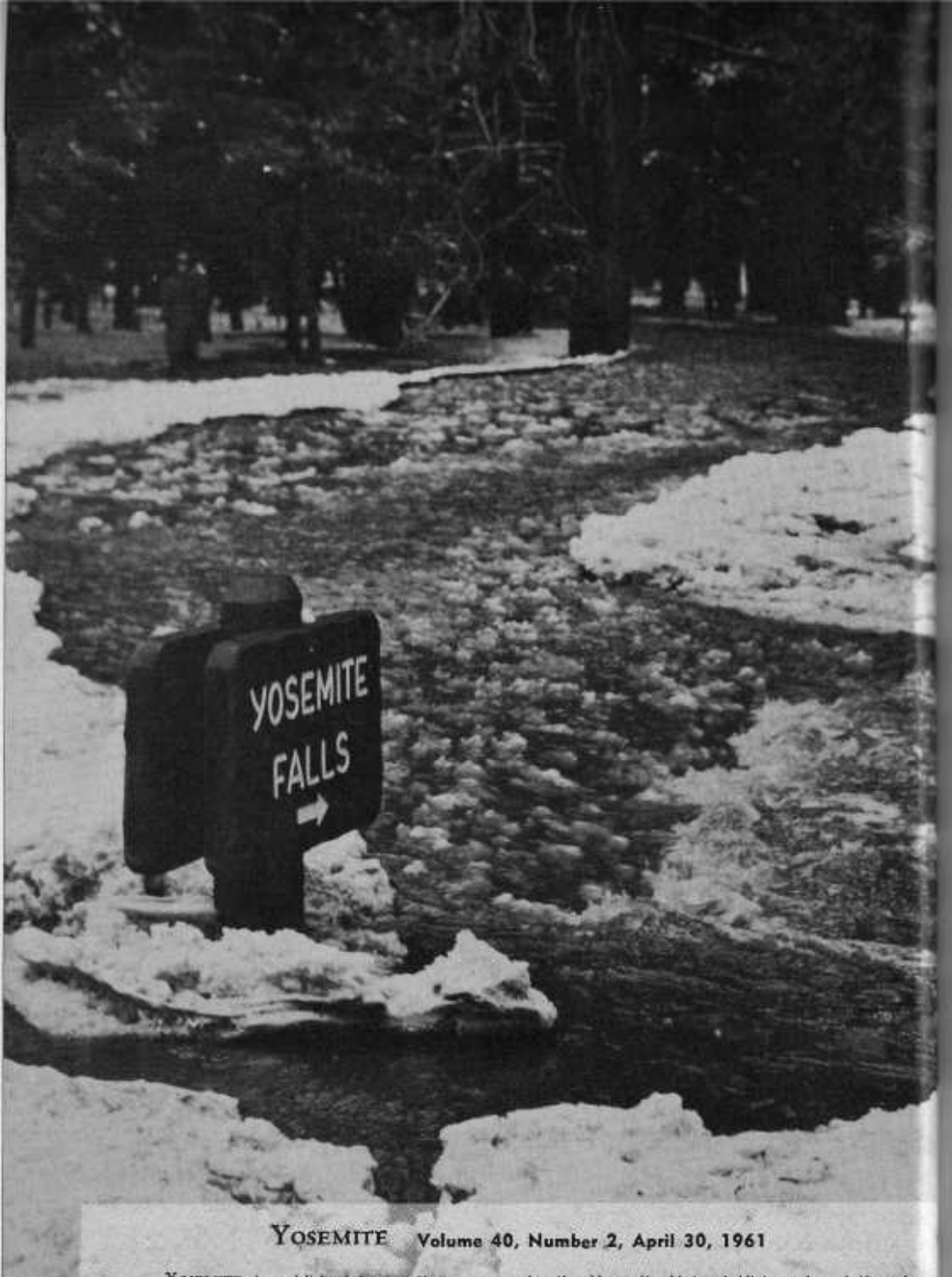
YOSEMITE



UMBER 2
1961



YOSEMITE **Volume 40, Number 2, April 30, 1961**

YOSEMITE is published twelve times a year by the Yosemite Natural History Association, Inc., in cooperation with the Naturalist Division, Yosemite National Park, John C. Preston, Superintendent; Douglass H. Hubbard, Chief Park Naturalist. Subscription rates are 1 volume - $2.00, 2 volumes - $3.50, 3 volumes - $5.00, life - $50.00, single current issue 25 cents. Price of back issues upon request. Manuscripts dealing with Yosemite's natural and human history are welcomed from our readers. The contents of this publication are not official in nature and do not necessarily reflect policy of the National Park Service. Articles may be reproduced if credit is given to YOSEMITE. Address all correspondence to Editor, YOSEMITE, Box 545, Yosemite National Park, California.

Ice Cones and Frazil Ice

by Fran Hubbard and C. Frank Brockman

The magnificence of Yosemite Falls has thrilled thousands of visitors to the Park. Relatively few, however, have seen or heard of the spectacular displays of ice that the Falls produce in cold weather.

During autumn, as colder weather approaches, the spray which bathes the cliff freezes during the night to form a giant fan of ice on the granite, 1,400 feet high, narrow at the top and widening to nearly 150 feet at the base. During the day, as the sun warms the cliff, Yosemite's basin reverberates with intermittent reports when great slabs of ice drop to its floor.

As winter progresses the accumulated ice, together with freezing spray and snow and ice that are washed over the brink of the falls from above the rim, gathers to form the famous ice cone at the base of Upper Yosemite Falls. Usually the cone reaches its maximum size by late March, and while it is generally 200-250 feet high, there have been times in past years when it reached even greater size.

In February 1937, the engineering department of Yosemite National Park made a survey of the ice cone. With the information obtained on this survey, calculations were made from a picture of an ice cone taken during the days of John Muir, which is probably one of the largest ever recorded. Ths study indicated that the height of the cone was 322 feet, its base occupied an area of 3.7 acres, and it contained a total volume of 25 million cubic feet of ice and snow.

Ice cones are formed in a similar manner at the base of all the waterfalls in Yosemite Valley, but none is as large or as spectacular as this one.

On several occasions the ice cone has been studied at close hand to determine its character, which varies considerably from year to year. In February 1933, the surface was so firmly frozen that steps had to be cut with an ice axe to approach within 20 feet of the top. In other years it has been easier to negotiate.

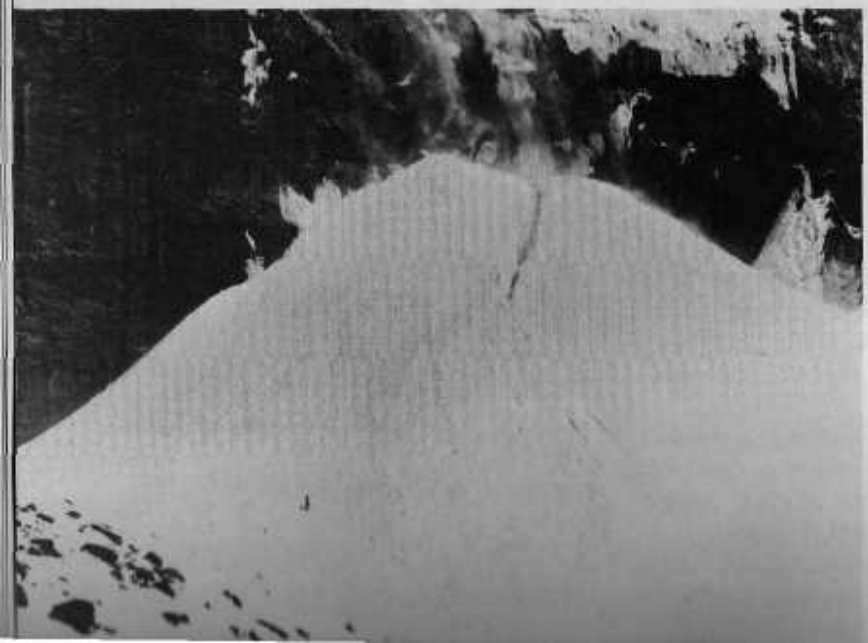
Incidentally, the ascent of the ice cone is not without considerable hazard. In addition to the danger

Yosemite Creek Bridge — As visitors usually see it. Note center post.

of falling ice one often has to contend with the hazard of a considerable volume of water which not only falls with great force and soaks one to the skin, but presents an additional danger in that it undercuts the rear of the cone. Thus the topmost portion, being in the form of a cornice, might give way under one's weight if the ascent to the actual top is successfully negotiated.

With the coming of warmer weather the ice cone gradually disappears. The water in the falls hastens the natural melting process (it generally has a temperature of over 32 degrees at that time), by continually washing the cone in an increasing volume. Usually by early April most of the cone has disintegrated.

The Lost Arrow section of the Valley floor in the vicinity of Yosemite Creek, is often covered with



1952's ice cone dwarfs Park Naturalist.

a blanket of ice in the early spring. Since this generally occurs about the time of the disintegration of the ice cone the two phenomena are usually associated. However, they are not directly related. The ice flow is the result of climatic conditions which prompt a sudden increase in the size of Yosemite Creek, followed by a sudden drop in temperature. The ice thus formed is known as frazil ice.

The word "frazil" refers to ice crystals floating in a body of water and comes to us from the French **fraisil,** meaning "cinders". Crystals of this type form in turbulent water only when a slight supercooling of the water is produced, generally by a sudden dropping of the air temperature to well below freezing. Individual crystals start as very thin, flat, round discs. They grow in size to about a tenth of an inch in diameter, at which time, in slowly moving water, branching extensions grow around their edges.

The crystals will move along in swiftly flowing streams, looking like finely ground, milky ice. They range from around 1/250th to 1/1000th of an inch in thickness, and they are apparently attracted to rocks and masses of ice by forces attributable to adhesion and capillary action. Freezing may later attach them more firmly.

Frazil ice lacks the grinding force of regular river ice, but it is dangerous from the standpoint of causing streams to overflow their banks and change their courses. Along Yosemite Creek, which flows into the Merced River about a mile from the base of the Lower Falls, the ice has sometimes reached a depth of more than 20 feet. The trails have to be opened with snow removal equipment once the formation of ice has ceased, but on either side the ice may remain for many weeks.

In April, 1953, the stream was diverted onto the road beside the creek, and a rotary snowplow was needed to clear it. Where the lower footbridge crosses the creek, the ice rose high enough to buckle the bridge and shift it from its foundatons. The flow was finally broken by the use of explosives and powerful streams of water from a fire pump. The 1954 flow completely filled the stream bed, covering the large footbridge near the Lower Fall with many feet of ice.

In 1954 Frazil ice covered the bridge — Center post in foreground.

Visitors to Yosemite may view the ice cone during winter and early spring from vantage points on the valley floor.

(Acknowledgement is made to the editors of **Natural History Magazine** for permission to reprint portions of Mrs. Hubbard's article "When Winter Grips Yosemite", appearing in their November 1954 issue. Editor)

AN AUGUST

by Howard E. Hobbs, Ranger Naturalist

We began our nature study that August morning in a very quiet little meadow along the Glacier Point road. Checking our topographic map of Yosemite National Park we saw that we were in Peregoy Meadow. It had been suggested that particular attention be paid to the wildflowers along the way. This was agreed upon and we embarked with eagerness upon what was to be anything but a wildflower walk.

Immediately we noticed several fireweed in full bloom. Early morning dew gave their purplish-pink petals an inviting luster. As we examined the plant carefully someone noticed something moving swiftly through the tall grass near us. Following at a respectable distance, we were not able to identify it until we reached a secluded little pond where it suddenly leaped into the air and landed with a splash. We laughed and moved nearer, only to be surprised when three more little frogs jumped from the bank and landed with three simultaneous "plunks." They remained near the center of the pond while each in turn blinked unbelievingly at us with large protruding yellow eyes.

One of our party made a sudden grasp in the mud along the bank where we were standing, and up came a handful of frog! A brief examination showed us that this one, along with the others, was the Sierra Nevada yellow-legged frog. But it revealed even more than that! This little fellow had some very interesting animals living under his arm! We noted fourteen leeches — parasites that have their place in nature.

After carefully placing the frog back in the water we sat and watched the drama of the pond world unfold before us. The sun's rays were beginning to filter through the large stand of lodgepole pine adjacent to the meadow and some of the rays were striking the water in front of us. Then, we saw it!

It was large, four or five inches long, but it was also flat and black. It was swimming along the bottom of the pond. It turned, banked, and reversed its direction, constantly skimming the bottom for food. What was it? Suddenly it disappeared beneath a root, ending our

ADVENTURE

speculation. Perhaps it was a flatworm, but we will probably never know for certain.

Several water striders caught our attention as they skimmed along, as carefree and happy as we, that lovely morning in August.

The mud began to stir at the bottom and there before our eyes were thousands of polly-wogs. They had been there all the time but we had not seen them, for they were exactly the color of the mud. Now we could also see tiny water insects moving hurriedly about in the mire, but meanwhile something was happening behind us.

A robin had arrived and was collecting her breakfast. Suddenly, we heard a high pitched squeak and turned to see the last evidences of a small tree frog disappearing down the gullet of our red-breasted visitor. As we looked on the action was repeated twice and then the ravenous bird flew off!

Flowers began to surge back into our consciousness and we were up and on our way again. It seemed to be our day to discover small things, especially when we noticed the very tiny flowers growing everywhere beneath the level of the grasses. We saw a pretty yellow blossom with brown spots here and there. Someone made the observation that if one used his imagination, he might see a face on the petals, and certainly, there it was. A reference was made to our flower book and it was found to be the dwarf monkey flower.

Soon we were back on the trail, watching for bright colors in the meadow. We saw several clusters of yarrow, aster, and then we came upon a pearl everlasting in bloom, and, although it is a common plant, it held our interest as long as any other that morning.

A short distance beyond we found the bleached remains of a young

buck. The carcass was completely gone and only the skull, antlers, ribs, and long bones remained. What death had visited this beautiful creature?

Two miles further along the trail we stopped for lunch. The banks of Bridalveil Creek seemed to be a very appropriate place to pause and we spread out the contents of our box lunches.

Before we had finished our first sandwich someone noticed a strange creature peering at us from behind a nearby out-cropping of granite. It was dusty brown and white in color with heavy fur, a small head, and short round ears. A marmot — no doubt about it! Some of the party moved a little closer in an attempt to photograph the little fellow. Others of the group moved down to the stream and began poking about along the shore.

An excited cry issued from the group at the water's edge. Several little water insects had been found and among them was the hellgramite with his mobile home of cemented sand particles.

While we were observing the antics of these aquatic creatures, one of the photographers returned from the ineffectual pursuit of the marmot. He explained that the rest of the group had found something that all of us should see immediately. In a very short time we found the group and saw instantly the object of their wonderment. We were obviously standing in what had once been a campsite of the early inhabitants of Yosemite — the Indian, probably a campsite of the Miwok.

. . . and the tree frog disappeared!

. . . a pictograph!

Beneath our feet were thousands of flakes of obsidian, the volcanic glass from which arrowheads are made. There were many mortar-holes around us in which acorns had been crushed for food. And there on a large boulder the most startling thing we had seen that morning, a pictograph! An ancient form of picture writing placed there perhaps hundreds of years before. Who could say what it meant? Of course, we all gave our interpretations and that satisfied the need for an answer to the mystery of the marking.

That evening, sitting around the last embers of our campfire in the valley, we discussed our notes and tried to interpret what we had seen on our nature walk. It was suggested that the events at the pond were steps in nature's food chain and that the dead buck was another chapter in the same story. This we agreed upon. No real conclusions were made as to the Indian campsite or its significance. Perhaps we could return another day, after further thought and some reading, and learn more of the way of the Indian.

A YOSEMITE 'OLD TIMER' PASSES AWAY

by Carl P. Russell

(John H. "Jack" Leidig was born May 12, 1874, in the old Sentinel Hotel. One of a family of 12 children, he spent the majority of his life in and around Yosemite National Park. Jack's wonderful humor will no longer be heard — he died November 1, 1960, and was buried in the Mariposa Cemetery. Editor.)

Jack was a friendly acquaintance of mine during my first years in Yosemite (1923 through 1929), but I came to know him well after I returned to Yosemite in 1947. He was genuinely interested in the preservation of authentic information regarding old times in the park and, of course, he was a veritable fountain. I accompanied him on trips about the Valley to get his identification of locations of historic interest, building sites and Indian camps. I made notes on these interviews and tours and Ralph Anderson did a systematic job of recording the locations pointed out by Jack. Field markers and in some instances interpretive signs, were erected at the places indentified by Jack. This cooperation was a valuable contribution made by Jack Leidig to the Yosemite history program.

Jack's testimony regarding the killing of one of the last grizzly bears of the Yosemite is well worth recording. It is not seriously at variance with other versions, but it does give more detail regarding individuals concerned with the event. Following is Jack's account.

One of the last big grizzlies killed in Marposa County was killed near Crescent Lake in September (it was Oct. 17), 1887, by Jim Duncan who had horses at Crescent Lake. He killed around 200 bears in his time. (John Muir in 1901 gave the total as 49, or more.) Charles McMasters had a herd of goats in the vicinity, and Robert Wellman, working for Stockton and Burron, was looking after a herd of cattle with a base at Buck Camp. Duncan and Wellman got this grizzly by building a lookout platform in some trees near the

carcass of a cow on which bears were feeding. It had been necessary to shoot this cow because she was hopelessly bogged down in swampy ground. At a time of full moon, Duncan and Wellman kept watch from their elevated platform until the big bear showed up. While it was feeding on the carcass they shot it. The estimated weight of this grizzly was 1900 pounds. I saw the hide in Hill's studio at Wawona and it was pretty near as big as a 9 x 12 rug.

The Robert Wellman referred to by Jack left a written account of the killing. Both the account and the bear's pelt are now preserved in the Museum of Vertebrate Zoology, University of California, Berkeley. Wellman testified that the length of the freshly-stretched hide was "nearly 10 feet." However, the tanned specimen is now 7½ feet long and 5 feet wide, not counting the outstretched legs. Understandably, a stretched and dried skin shrinks during the tanning process. To Jack's youthful eyes the big, stretched pelt might well have appeared "as big as a 9 x 12 rug."

The Buck Camp and Crescent Lake sections were favorites with Jack in his later years. Buck Camp can be reached via a fire road, and in the 1950's park rangers sometimes helped the old-timer get there to re-experience the fishing thrills of his boyhood and youth.

As is well known, the Leidigs pioneered in the accommodation of tourists in Yosemite Valley. During the earliest years of the State's administration of the Yosemite Grant, the Leidig Hotel, immediately under Sentinel Rock, enjoyed a very favorable place in the Yosemite hostelries picture. Jack's mother was noted for her good cooking and for the cleanliness of the Leidig establishment.

Charles Leidig, Jack's older brother, was the first white boy born in Yosemite Valley. (Jack would say, after Charlie's death in 1956, that **he** was now the first white child born in the valley!) Jack, who came along a few years later, reached his teens before t family moved from Yosemite.

After a few unhappy years in L Angeles, the Leidigs came back the Sierra. Jack participated in t operation of another Leidig Ho at Grant Springs on the Raymon Wawona Road. Later the fam had a hotel in Raymond for fi years.

This was the day of horse-dra stages, and Jack became acquai ed with many of the drivers w handled the transportation of t Yosemite crowds. Among the reinsmen, George Monroe was r ognized by Jack (as by all others his contemporaries) as "the Kin pin driver of them all." Accordi to Jack, the men were employe of the Yosemite Stage and Turnp Company, and they were expe enced on both the Merced Ma posa-Wawona route and the M dera-Raymond-Wawona route. T stage trip into Yosemite Valley to three days, with overnight stops Mariposa or Raymond and at W wona.

Before the Wawona-Yosem Valley wagon road was built (co pleted in 1875), trains of sad animals took the tourists from W wona to Yosemite. Some of packers and guides who engag in this exacting service were s around in Jack's boyhood days.

Jack's mind and memory w clear, and his sense of humor with him to the end of his life. P Naturalist Douglass Hubbard calls Leidig's last trip to his belo Valley, made on the occasion his 86th birthday. Walking w some difficulty and using a ca Jack came into the museum, nouncing loudly: "I arrived in valley 86 years ago this morn and I didn't have a shirt on!"

Later that day the two men ited several historic places and J pointed out where "Piute Geor was shot near Rocky Point, site of the cabins of the murd George Boston and Dick Who at Cascades, and John Lember El Portal. He told Hubbard tha

(Concluded on Page 26)

The RING TAILED CAT

by

Robert W. Crippin, Ranger Naturalist

One night last summer the Crip- family was visited, for the first me, by a ringtailed cat. The large es, small fox-like face and long, shy ringed-tail make this park sident a very interesting animal watch for in the evening hours. t only interesting but useful — cause of her presence this sum- r, we have been entirely free of ce. Mice have been a real pest in mer summers but this year were minated quickly by our ring-tailed end. In gold-rush days miners ten encouraged ringtail cats to e about their cabins to perform using service. Due to this associ- ion they became known as iner's cats" in California.

The ringtail is one of the most pealing of our Yosemite National k animals. It is seldom seen by st visitors as it is nocturnal in bit. There have been, however, merous sightings in the vicinity the Ahwahnee Hotel and Moun- n House at Glacier Point. Occur- g most frequently in rocky and shy localities ringtails are most ndant in the Upper Sonoran Life ne.

Ringtails are slender, small sized animals slightly larger than a gray squirrel, light brown above and white below. Their delicate pointed faces seem to be all eyes. A narrow black ring surrounds the eye and this is nearly encircled by a white area which further emphasizes the size of the eyes. Large, erect ears seem out of proportion to the animal's overall size. Legs are short and tracks are not full-footed like those of the raccoon. Padded feet enable the ringtail to run on the smooth rocks with sureness and safety.

Excellent climbers, ringtails hunt in trees as well as on the ground. Aside from footprints, there is little sign to indicate their presence.

Observing a captive ringtail at the zoo revealed the following habits. She slept frequently, curled up with her head snuggled into her belly so that the back of her head was against the abdomen. In warm weather she usually lay on her side, but if it was cold she curled up with her feet under her, head nestled on her belly, and the long tail curled entirely around her. The tail thus

seemed to serve as a cover for her body against the cold.

Subsisting to a large extent on wood rats, mice and other rodents and to a lesser extent on wild fruits, such as manzanita berries, coffee berries, etc., ringtails also eat insects, centipedes and other invertebrates. Any small birds they can surprise are eaten as well.

Few animals have acquired so many names. The scientific name is *Bassariscus astutus*, which means literally "clever little fox." Other common names given are coon-fox and band-tailed cat. Civet cat is the name often used in the Southwest but should be discarded as our ringtail cat is a very different animal from the civet. Although "cat" is frequently added to the common names this is incorrect as ringtails are not closely related to the true cats which originated in Europe and Africa. The ringtail cat is classified with the raccoons in the family Procyonidae.

MOUNTAIN CARPENTER BEES

by Mervin Giuntoli, Museum Aid

Among the varied types of wildlife found in Yosemite National Park, the most plentiful are the insects. Certain forms are seen daily; the many butterflies, for example. Others of this group are easily found at night flying into campfires and electric lights. Then there are those that insist on dining on either the park visitor or his food. These types are readily noted even by the most unobservant, while their less obvious kin are ignored or looked upon with indifference or revulsion. It is unfortunate that this is so. Insects can provide, to the discerning observer, many examples of the complexity and wonder of nature.

As a case in point, I wish to relate an experience I had one morning in early July. Climbing one of the many talus slopes in the Valley, I stopped to rest and saw a large, glossy black, mountain carpenter bee hovering close to the rocks. Suddenly it zoomed down among the rocks and disappeared. Several moments later two bees were seen to hover in the same area. I climbed down to inspect the situation more closely and found a slab of timber wedged among the rocks. Examination revealed several holes located at one end of the piece of wood. I pounded on it and was greeted by angry buzzes from deep within. Further blows brought ten of the residents out of their home and into the air.

I retired to the museum library to learn more about these creatures. Members of the genus *Xlyocopa*, carpenter bees burrow into solid wood to lay their eggs. Deposited in cells at the end of long galleries, the eggs are placed in a small mass of honey-pollen (bee bread) and the chamber sealed off by a partition of fermented wood chips. This wall is characteristic of the genus, exhibiting a spiral construction. Each cell is filled and walled before the next is begun. After hatching, the larvae feed on the "bread", pupate and emerge as adult bees.

I have watched these insects feeding on mint, thistle and mock orange. They also may be seen hovering near buildings where the

infest outer timbers, causing severe damage to untreated wood.

In recommending these animals to you I would say three things. Study their life histories - they are fascinating and worth knowing for the pure joy of knowledge. Look for beauty in them - in the eyes of the true lover of nature all things are beautiful. Lastly, if you are of a practical "bent", remember they are useful - as nature's scavangers they help convert downed timber to soil, thus contributing to the overall good of the land.

Yes, I recommend you begin to observe more closely all of Mother Nature's fascinating children. You will not be disappointed, she has a remarkable family!

Xylocopa in its egg gallery.

A YOSEMITE 'OLD TIMER' PASSES AWAY

(Continued from Page 23)

once had an opportunity to buy the "preemption rights" to the present El Portal for a small sum, but that his father would not lend him the money.

Jack Leidig was an extraordinary link between the earlyday Yosemite life and modern bustle in the popular Valley. It was great, good fortune that placed him in the Mariposa hills during his declining years, where he was disposed to recount his experiences for the benefit of the historical record. The Yosemite National Park collections are notably richer because of his willingness to cooperate. It is worthy of note also, that Jack participated in some of the comparatively recent official affairs of the Government in Yosemite. Especially is he to be remembered for his effective work as foreman of the CCC Camp at Cascades in the 1930's.

Part 1

TRE
ROC
ENV

Plate 1

Successes in the struggle for survival under seemingly unfavorable conditions are well illustrated in the accompanying photographs which were taken 27 and 28 years apart.

The small tree in plates 1 and 2 appears to be losing the battle, but it will more than likely be in the same place 30 years hence.

Plates 3 and 4 show how little change can occur over the years. Even the clumps of grass in the foreground are the same as 28 years before. In the central tree only

Plate 2

IN

NMENTS

by Neva Snell

a few leaders have lost vigor. The tree on the far right is, in contrast, definitely on the decline; whether due to insect attack or environment we cannot say.

Plates 1 and 3 were taken by Joseph S. Dixon in 1933; plate 2 in 1957 and plate 4 in 1958 by Neva Snell. The trees are located in the Yosemite Research Reserve.

Plate 3 (above)

Plate 4 (below)