

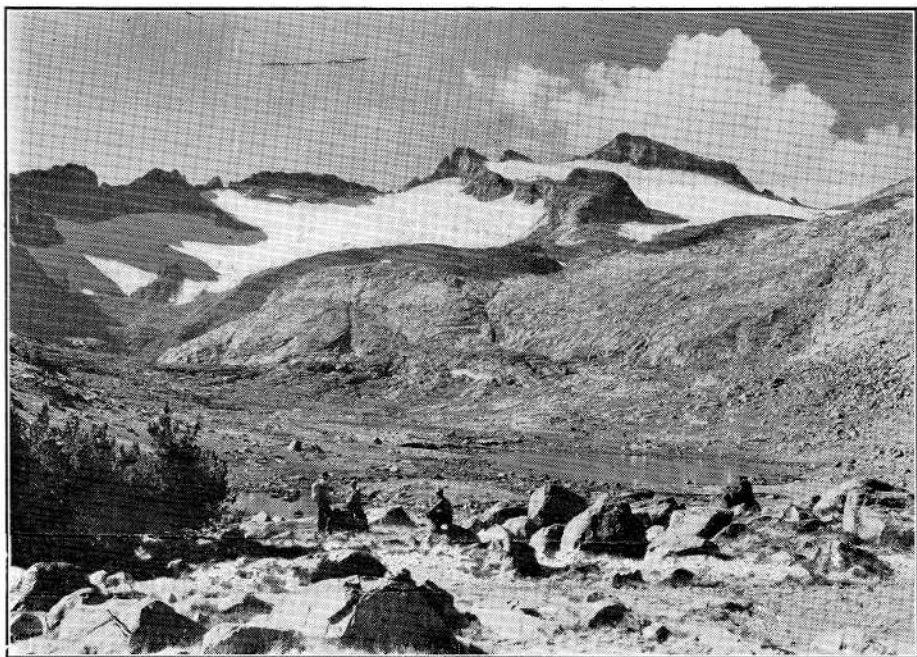
YOSEMITE

NATURE NOTES

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No. 10



Mt. Lyell (15,095 ft.) and the Lyell Glacier

Photo by Anderson

Yosemite Nature Notes

THE MONTHLY PUBLICATION OF
THE YOSEMITE NATURALIST DEPARTMENT
AND THE YOSEMITE NATURAL HISTORY ASSOCIATION

F. A. Kittredge, Superintendent

D. E. McHenry, Park Naturalist

H. C. Parker, Assoc. Park Naturalist

H. B. Robinson, Asst. Park Naturalist

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GLACIER SURVEY RENEWED

By Harry B. Robinson, Assistant Park Naturalist

The annual glacier survey in Yosemite National Park was renewed September 14-19, 1947, after a lapse of three years. The last survey was in 1943, after which the project was discontinued because of personnel and financial problems resulting from the war. It was considered especially desirable to make the survey this fall because the year has been so extremely dry.

The chief objectives of the survey were to make a photographic record of Dana, Maclure, Conness and Lyell glaciers for comparison with photographs of previous years; and to determine the extent to which the surface of the east and west lobes of Lyell had fallen or risen since the last measurements in 1943.

The party, consisting of Associate Park Naturalist Harry C. Parker, Temporary Ranger Ernest L. Stanley, Museum Assistant John D. Battenberg and the writer, left Yosemite Valley early Sunday morning, September 14. Supplies and equipment were left at Tuolumne Meadows, and by 11:05 a.m. the party was on its way from Tioga Pass to Dana Glacier.

Photographs of the glacier and moraine were taken from upper Dana Lake. Others were taken from the terminal moraine, especially of the ice cave that was reported by Ranger Naturalist Allen W. Waldo in the September issue of this publication. Because of the lateness of the hour and the necessity for haste a detailed study was not made, but it was observed that the glacier was free of last year's snow and that the surface was melting rapidly.

An interesting feature observed between the terminal moraine and upper Dana Lake was a subterranean stream originating in a small patch of snow and ice at the outer base of the moraine. The milky water flowed over the surface of its boulder-paved bed for approximately one hundred yards, and then disappeared beneath a jumbled train of boulders that led to the lake below. For the remaining one hundred yards or more the stream could be heard trickling beneath the powder-covered, rock surface over which it undoubtedly had flowed earlier in the season.

The following day was spent in hiking from Tuolumne Meadows, and setting up our camp at the Upper Lyell Base Camp above 10,500 feet. Our supplies and equipment preceded us by mule back.

A most interesting observation was made immediately upon reaching the meadows of the Lyell Fork. The waters were milky from that point to their very source, indicating rapid melting of the Lyell Glacier. The milky water reached farther down the stream than has ever been reported previously.

The east lobe of Lyell Glacier was visited the next day. Here, in addition to photographs, measurements were taken to determine differences in the level of the ice surfaces since 1943. This was done by measuring vertical angles from established stations ("G" and "H") on a base line along the surface of the ice to points at known horizontal distances.

The marker designating station "H" on the west side of the lobe was located, but the one for station "G" could not be found. A point approximating this station was selected, and the writer took readings from that point by means of an Abney hand level. Parker and Stanley, by use of a one hundred foot steel tape, located previously established points 1, 2, and 3 along the base line by measuring known distances from station "G". The writer, in turn, sighting from station "G" upon an ice axe held at eye level by Stanley, obtained the vertical angle of each point in question. The vertical angle was then converted to feet, the figures showing

that the surface of the ice was lower than in 1943 but exactly the same as in 1940-1942. Point 1 was 8.92 feet lower than in 1943; point 2 was 20.15 feet lower; and point 3 was 9.1 feet lower.

A possibility of error resulting from the procedure of measuring is recognized. For example the heights of the rodmen and instrumentmen have no doubt varied from year to year. This year the rodman was a six footer about the same height of the rodman of 1943; but the instrumentman, 5 feet 7 inches in height, took the readings from a sitting position, whereas the instrumentman of 1943, a six footer, took the readings at eye level in a standing position. This difference alone would account for an error of approximately eighteen inches, and if recognized would bring the ice surface to the lowest level ever measured.

The glacier was relatively free of snow at the edges, and the surface was covered only thinly in places. Observations were made during the heat of the day; consequently the surface was wet and slushy. Numerous little water or slush pockets, some of them six inches or more in depth, appeared to be the remnants of sunpits, though this is disputable. Nearer the eastern edge of the lobe, snow was more abundant, and sun cups there were a foot deep. Water was carried over the surface of the ice by numerous small streamlets, most of which flowed transversely toward the lower center of the lobe. Concentric flow lines that dipped toward the central part of the lobe were

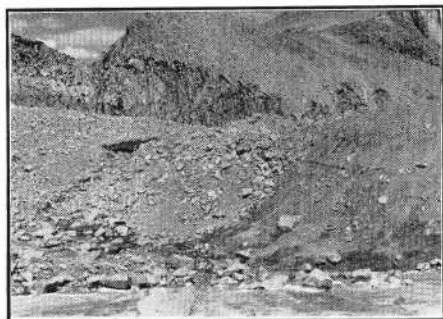
also exhibited. Rivulets of meltwater followed these flow lines. A great number of rocks of various sizes including some pedestal rocks lay upon the glacier near its western edge.

Because of a storm beginning that evening and continuing intermittently during the following day, the trip to Maclure and the west lobe of Lyell could not be made. The next day the party broke camp and returned to Tuolumne Meadows.

The trip to Conness Glacier was made from Tuolumne Meadows September 19. Photographs were taken of the glacier from Conness Basin and the summit of the terminal moraine immediately below the glacier. The surface and edges of the ice were thinly mantled with snow that had fallen two days earlier, but the bergschrund and a number of

crevasses were observed clearly through the snow.

At this writing the film has not been processed so a photographic comparison with previous years has not been made. However, it is generally agreed by those who visited the glaciers this summer that they reached their lowest ebb this year.



Conness Moraine

Photo by Anderson

GREEN SNOW IN THE YOSEMITE REGION

By Carl W. Sharsmith, Ranger Naturalist

On an old snow bank at about 11,800 feet altitude just below the Koip Glacier moraine during August, 1947, some patches of snow of a peculiar dark greenish color were observed. The patches were about the size of one's hand and penetrated the coarse, melting snow to a depth of four to six inches. Believing that these might be representative of real "green snow," different from "red snow" and caused by a different plant organism, I collected some of the snow in a vial. I had been on the alert for such snow in our High Sierran snowfields for several years, so I was very pleased to learn from Dr. Lee Bonar of the University of Cali-

fornia at Berkeley, to whom I had sent a sample, that the contained organism agreed in description with the common causative agent of greensnow, namely **Rhaphodema nivale**. Individually, this plant is of microscopic size; and, like the plant causing red snow, is a green alga. Red snow is common in certain years in snowfields in the High Sierra. This is the first time that green snow has been noted in the Yosemite region; indeed, green snow, known to exist in snowfields in Greenland, Europe, and Antarctica, was not reported for North America (Yellowstone National Park) until as late as 1941 (Kol, E., in American Journal of Botany, Vol. 28, pp. 185-191. 1941).

A PERSPECTIVE REPORT ON THE PROGRAM OF INTERPRETATION**By Raymond Gregg, Park Naturalist****National Capital Parks**

Editor's Note: Prepared for the April, 1947, meeting of the American Planning and Civic Association, Washington, D. C.

Our National Park System is one of the few really unique contributions of our nation to world culture. Our planning techniques, protection methods, and our structures and physical facilities are employed wherever parks are created in the world today. Not less significant is the program of interpretation and the research basic to it, which has evolved in our national parks.

The leaven of learning that permeates society today has whetted appetites for knowledge, expressed in intelligent curiosity that demands to be satisfied. It is also a solid foundation for fundamental appreciation of the material and esthetic values with which national parks are concerned. Thus, the very factors that now make interpretation more exacting have, nonetheless, created greater demand and necessity for it, and have made it a medium through which values such as those inherent in national parks may find their highest use.

Despite sympathy inspired by nostalgic memory, the colorful earlyday wrangler or stage driver with "tall tales" and catch answers directed more to generosity than the curiosity of the visitor finds little acceptance today as a suitable medium for presenting the "park story." Since 1918, when pioneer nature guide trips and campfire lectures were offered in Yosemite National Park, authentic, planned interpretation has grown in

scope and acceptance until it is almost everywhere taken for granted.

The Interpretive Outline and Graphic Sheet now are integral parts of the Park Master Plan. The Interpretive Statement, a part of this outline, is or should be a classic description of the character and significance of an area, adequate to justify its status and to serve as a guide for its use and administration.

World War II brought discontinuance or skeletonizing of interpretive services in the parks. In areas where visitation was negligible, the loss was not felt seriously. Some parks, however, enjoyed relatively heavy visitation, serving morale and rehabilitation purposes for personnel of the armed forces. Despite extraordinary effort, the few naturalists remaining on duty could, at best, provide only gestures toward keeping museums open and offering needed and requested lecture and guide services. In several instances, however, naturalists were able to contribute substantially to wildlife management studies, the solution of protection problems, and scientific investigations, as well as to make progress in museum and other planning during war years.

After the war there were trying days when delay in restoration of funds for vacated positions made places for returning veterans problematical. However, through 1946 supplemental appropriations all were

re-employed as soon as available.

Today, there are 61 year around professional employees in the Branch of Natural History and field positions associated with it. Some new positions established in 1947 fiscal year may be of interest. In the field, I think off-hand of a new naturalist position in Olympic National Park, and additional naturalists in Mt. Rainier and Glacier National Parks and the National Capitol Parks. In Mount McKinley and Yellowstone National Parks, year around biologists are provided for the first time to carry on wildlife work. The present overall staff exceeds that of prewar years, but due to the 40-hour week, does not provide an equal amount of man time, especially for public services which grow in demand.

An outstanding gain in the interpretive field during fiscal year 1947 is the establishment of three regional naturalist positions in Regions II, III, and IV. These men coordinate thinking, planning, and execution of interpretive functions and wildlife, geological and museum matters within the Regions, in the latter instance touching also upon the field of history where museums are in historical areas. The existence of these naturalist positions provides advisory and administrative services to the region and field not within the capacity of the small central office staff in Chicago. Regional biologists, positions under the direction of the regional naturalists, were set up in Regions II and IV. In the Branch of Natural History, Director's Office, two important new positions were established. A geologist will coordinate

all geological work at the Service level, and will carry on important liaison functions with the U. S. Geological Survey, now engaged in a broad program of research work involving National Park Service areas. A new biologist position provides much needed assistance to the chief of the Wildlife Division, and in the incumbent, makes available to the Service the talents of an aquatic biologist and fisheries expert for long neglected fish management problems.

The lively prewar pace of progress on national park and historical area museums came to an abrupt halt during the war with projects in varying degrees of planning and construction. The current critical building situation prevents all new and major construction at this time. However, four prewar museum projects which require only completion and installation of exhibits have been authorized to proceed. Two of these deal with the Revolutionary and two with the Civil War period.

There are over a hundred existing museums in National Park Service areas. Of these, about twenty-five are historic house museums such as Lee Mansion and the House Where Lincoln Died. Most of the remainder are focal point museums, usually small and of limited subject content. The buildings in Yosemite, Mesa Verde, and Morristown, constructed as central museums, and generally adequate for the purpose, are not typical. More often, the central museum in a park is a structure adapted from some previous use, and ill suited for museum purposes. Some

even offer poor protection against fire and the elements for valuable collections and exhibits housed in them. In others, exhibits are temporary and makeshift, no credit to the areas in which they exist. These conditions do not exist altogether through negligence. There is a large backlog of museum projects in advanced stages of planning, ready to go into work in short order when funds and materials are available. Some parks which need new or additional museums will not be able to accomplish much beyond tentative planning until there is again an adequate Museum Division to provide technical skill for exhibit planning and preparation work.

No plea is made for an all out drive to build bigger and more museums just for the sake of having them. The museum should not be the "opus

magnus," nor an end in itself, in national parks. The area itself is the true museum. Our so-called museums are properly only "labels"; orientation centers and portals; invitations and guideposts to actual human understanding and enjoyment through experience of the values the park has to offer. But neglect of needed museum facilities is not a sensible approach to subordinating museums to the park itself. Indeed, it requires more genius to introduce and interpret the park story effectively and unobtrusively through properly designed and placed exhibits and orientation devices than to create a super-museum which aspires to reproduce the park in miniature. As headquarters for the interpretive staff the museum also provides an important facility.

(Continued in Next Issue)

WEASEL OBSERVED AT SWINGING BRIDGE

By Lloyd Mason Smith, Ranger Naturalist



Although weasels are not uncommon in Yosemite Valley, they are rarely seen for any length of time. Ordinarily they are very wary and furtive. So it was with considerable surprise that one was observed at close range for several minutes in July, 1946. The scene was the south end of the Swinging Bridge just below Old Village, on the Merced River banks. A nature walk was in the process of being started when our attention was drawn to the bridge by a tourist's inquiry as to what type of brown squirrel was bobbing about on the bank.

The "squirrel" proved to be a long-tailed weasel. He would run from beneath the planking at the edge of the bridge, leap nimbly over the tall grass in long undulating bounds, pause a moment to stand upright on his hind feet like a large picket-pin ground squirrel, and then arch away on a new tangent, in and out, above and behind the grass clumps, as if in frolic.

We pressed closer; only mildly concerned at our approach, the weasel zigzagged back to the bridge. Two boys were crossing the structure at that moment, and these new potential enemies baffled the animal. He leaped agilely back to the river's bank and sought refuge in a rodent burrow, only to reappear a second later, undecided. He then jumped toward the bridge, again changed his mind, bounced back to the burrow, and still was uncertain; for once more he shot out of the cavity and headed for a second time toward the comparative safety of the bridge, directly under the boys' feet. They stood quietly above, watching.

Once under the wooden planks, the weasel again felt insecure. He ventured out directly toward us, stopped in full view, staring with his tiny, beady eyes. The bright yellow of his long neck contrasted sharply against the soft brown of his back and body. Abruptly he wheeled,

leaped back under the bridge, darted out the farther side, and took refuge among the boulders along the bank.

One last look we had at him, as he stopped momentarily, turned about, sat up on his haunches, and poked his cat-like face over the brink of a rock to peer in our direction. A flash of yellow and brown and of a long black-tipped tail, and he was gone.

Two of the members of our party then narrated how two days before, also along the edge of the Merced River but above Old Village, they had chanced upon another weasel (or perhaps the same one, since their foraging range undoubtedly must be rather extensive) in the act of pouncing upon a young squirrel, probably a chickaree. The squirrel sought safety toward the river, but was overtaken on the edge. At this critical moment, the narrators intercepted and the weasel stopped his ferocious attack for a split-second, permitting the wounded and frightened squirrel to leap bodily into the river and escape. The weasel did not flee, however, but tried to follow its prey along the bank, pacing up and down and at last giving up. It then returned within two feet of the people who had interrupted its hunt, and sniffed about angrily. Only after several minutes of this did the furious creature abandon the search and slink from view in the tall grass.

BOOK REVIEW

HERMON CAREY BUMPUS,
YANKEE NATURALIST

By Hermon Carey Bumpus, Jr. University of Minnesota Press, Minneapolis, 1947. 141 pp. \$2.50, 14 illustrations.

This biography of Hermon Carey Bumpus by his son is not another "Life With Father," but accomplishes in an entirely different manner and for different reasons, what Clarence Day accomplished: from the pages of two slender volumes, two vital personalities are created for those who never knew either man.

The author writes with complete objectivity and tells little of the personal living of his father, but presents most skillfully the events of his professional life. The sketches of his father's boyhood and youth in New England, his work at Woods Hole and Brown University, his reorganization of the American Museum of Natural History, his services to the National Park Service and development of Trailside museums—all these aspects of a crowded life are told so simply and with such a discriminating choice of words, of quotations and anecdotes that a vivid personality is added to the reader's acquaintance.

The qualities of practical imagination, patience and discernment in working with people, limitless energy and no inertia reached dramatic proportions in Dr. Bumpus. His life spanned the years from 1862 to 1943 and all of them during his maturity were creatively dynamic. His influ-

ence in bringing the museum to the people and adding the functions of popular education to those of storehouse and research cannot be overestimated.

After his retirement from Tufts College he devoted several years of time and energy to the National Park Service. The Trailside museums as these are found throughout the Parks are memorials to his vision and energy. The Glacier Point Lookout Station in Yosemite was the first he established, working through the American Association of Museums.

Leafing through a report which Dr. Bumpus wrote in 1927 the reviewer found in it the imagination, enthusiasm, objective honesty and humor which illuminate the pages of this book. The paragraph concerning the "Yosemite Nature Notes" of that time has a spark now, 20 years later, when it has taken to print and yet survives to give vigorous form to local natural history and historical lore. Then the "Notes" were published, quite literally, by hand. He wrote: "This is a delightful little amateurish monthly. It bears all the signs of being issued under the combined forces of determination and hardship, but the articles, full of the atmosphere of the Sierras, are cleverly adapted to the mentality of the average reader, while no infrequently embodying observations of real scientific value. It is just right as it is—may it never be destroyed through an effort at typographic improvement." (L.B.P.)



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Dan Anderson