the selective manner in which the glaciers and the other agents of erosion have acted upon the irregularly and unusually structured granitic rocks.

In the pages that follow the purpose has been to set forth the story of the Yosemite Valley in language simple enough to be understood by one having no geologic training, yet in sufficient fullness to leave no doubt in the critical reader's mind as to the foundation of observed facts or as to the processes of reasoning whereby the conclusions are reached. Each geologic concept is briefly explained, and ponderous scientific terms are avoided as far as practicable. Discussions of technical points regarding which there has been diversity of opinion are purposely made brief, in order not to weary the reader nor to rekindle a spirit of controversy.

For the guidance of those who may desire to acquaint themselves with the older hypotheses and compare their merits more fully than has here been attempted, a bibliography of all the scientific literature bearing on the geologic history of the Yosemite region is added at the end of the volume.

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GEOGRAPHIC SKETCH OF THE YOSEMITE REGION AND THE SIERRA NEVADA

LOCATION AND CHARACTER OF THE YOSEMITE VALLEY

The Yosemite (yo-sem'i-ty) Valley [20] is situated about 150 miles due east of San Francisco, on the west flank of the Sierra Nevada, the great mountain range that extends lengthwise through eastern California. (See pl. 1.) It is the principal scenic feature of the Yosemite National Park, which embraces a tract 1,124 square miles in extent—almost as large as Rhode Island. (See pl. 2.) Compared with the entire park, however, the Yosemite Valley is small, measuring but 7 miles in length and 2 miles in breadth. It is, in fact, only a widened portion of the prevailingly narrow canyon of the Merced (mare-sed') River, which traverses the south half of the reservation from east to west. Nor is it the only chasm of note within the park. A dozen miles to the north, and parallel to it, is the Grand Canyon of the Tuolumne (tu-ol'um-ne) River, a prodigious gash which exceeds the Yosemite Valley in length and in depth, though scarcely in scenic grandeur, and which opens into the Hetch Hetchy Valley, a lesser yosemite that now holds an artificial lake, impounded by a dam at its lower end.

Broadly viewed, the canyons of the Tuolumne and Merced Rivers are two long furrows in the west flank of the Sierra Nevada—two of a great series of such furrows, all of notable depth and nearly all arranged roughly parallel to one another and at right angles to the crest line of the range. The Yosemite, therefore, is but one chasm in a land of many chasms. It is, however, by far the most strikingly modeled of all.

From most other parts of the Merced Canyon, and indeed from most other canyons in the Sierra Nevada, the Yosemite is distinguished by its great width relative to its depth, by its exceptionally sheer walls, and by its level, almost gradeless floor. As is manifest from the views on Plates 3 and 16, *B*, the Yosemite is broadly U-shaped in cross section. Even in the portal between El Capitan and the Cathedral Rocks, which is the narrowest part of the valley, the floor is many times broader than the channel of the river. By contrast the canyon immediately above and immediately below the valley is little more than a narrow, V-shaped gorge. In the valley, moreover, the river has so gentle a gradient that it meanders about in leisurely fashion, but in the gorges above and below it makes a direct, tumultuous descent. The absence of prominent spurs, finally, gives the valley an open, roomy aspect; it permits a vista to be had from one end almost through to the other, in spite of the fact that its course is sinuous. Muir aptly likened the Yosemite to "an immense hall or temple lighted from above."

In depth the valley does not greatly exceed the deepest of the other parts of the Merced Canyon; it measures between 3,000 and 4,000 feet. But in the valley the effect of depth is enhanced, in spite of the breadth of floor, by the exceeding boldness of the cliffs, by the continuity of the bordering plateaulike uplands, and by the seeming deliberacy with which the great waterfalls descend from the lofty rims.

Because of its walled-in character, its sequestered position more than halfway up the flank of the Sierra Nevada, and the ruggedness of the surrounding country, the Yosemite was originally very difficult of access. The Merced Canyon in its primeval wildness afforded no convenient avenue of approach. It had to be conquered by engineering skill and the use of

[20] Yosemite comes from "üzümati" or "ühümati," which in the language of the Southern Miwoks meant "grizzly bear." It is said to have been originally the name of the tribe of Indians who inhabited the valley, or at least of that part of the tribe which dwelt on the north side of the river. The name was given to the valley, at the suggestion of Dr. Lafayette Houghton Bunnell, by the Mariposa Battalion, the first party of white men to enter the valley, in 1851.