

YOSEMITE VALLEY, CALIFORNIA

MODELED BY EDWIN E. HOWELL, 1884
UPDATED MAP LAYER BY FRED WILHELM, 1939

THIS YOSEMITE VALLEY, California, relief model is actually two maps in one. Its original terrain map was discovered during restoration in 2005 underneath the current map painting.

Yosemite was first modeled by Edwin Howell in 1884 for the Smithsonian, then reproduced commercially. The original terrain is based on the California Geological Survey maps and several independent papers by eager tourism directors and California boosters, who were promoting the Yosemite Valley.



Figure 113. A view of Yosemite Falls (center) as seen from Buck Peak, a view that the relief model can almost recreate. Photograph from the Library of Congress Photograph Collection



Unlike some other Howell models, this model is designed to lay flat on a tabletop. In this position, when you bend down to put the frame at eye level, it immediately presents Yosemite's dramatic relief so eternally compelling to photographers and visitors: domes, hanging falls, glacial valleys, river, and rock. Considering that a human's height would equate to a dust speck on the painted river bottom, it is almost unimaginable that thousands of feet of dense ice once stood overhead, slowly grinding, splitting, and crushing everything in its path. Stream erosion further contributed to the spectacular waterfalls and rivers in Yosemite.

The original model was on display in the old Geology Museum when it was on the second floor of Science Hall. A photo of that original model's display is in the *Introduction* as Figure 24.

In the 1930s, another layer of map was painted on top, using "Geologic History of the Yosemite Valley" (USGS Professional Paper 160) by François E. Matthes, a leading USGS topographer of Yosemite. But note that the black rectangular boundary inside the map is not the park boundary. It's the outline marked on Matthes' map. The model is one of many that museum artisan Fred Wilhelm created or modified at UW during the 1930s. During this map's restoration, the Howell layer of topographic detail was discovered under the present illustration. Wilhelm, in a common practice at the time, added a second paint layer onto a purchased model to document new geologic data or to customize the model for Science Hall.

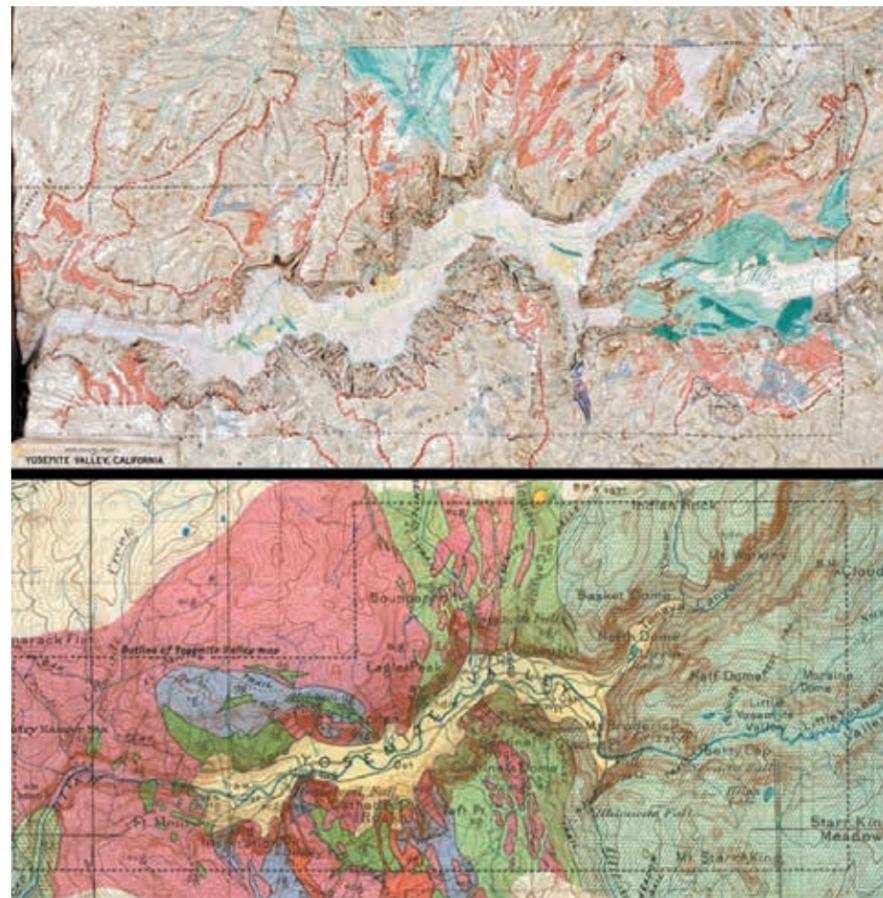


Figure 114. A comparison of the current Yosemite model geologic theme (top) with the 1930 François Matthes map (below).

Wilhelm painted the Matthes map's thematic layer showing the effects of three glacial epochs, the Wisconsin (blue-green), the El Portal (grey-pink), and the Glacier Point (purple). When viewed from above, the colors show ravines filled with thick glacial deposits. The dark green patches at center right are massive fields of washed morainal stone, with the green parallel ridge lines across the valley marking individual moraines. Mountain peaks, such as Half Dome, were ground smooth by glacial pressure. The Merced River bottom of the Yosemite valley is shown in near-white to indicate the recent build-up of new gravelly alluvium that constantly tumbles down from mountain faces or is outwashed from ancient gravel beds left behind by melting glaciers.

In 1871, Clarence King—future first Director of the U.S. Geological Survey—as a young man led a survey team who, on foot and horseback, measured every mile of the proposed Yosemite park boundaries. King's fascinating and still-readable travel account in the Yosemite, *Mountaineering in the Sierra Nevadas* (1872), brings home the dangers of survey fieldwork. Here is an excerpt describing how they crossed a flooded snow-melt stream with all their precious survey equipment:

A little way farther [along Chowchilla Trail] we came upon another stream rushing violently across the road, sweeping down logs and sections of fence. Here Clark dismounted, and we drove the whole [mule] train in. Three animals [with equipment] got safely over, but the instrument mule was swept downstream and badly snagged, lying upon one side with his head under the water. Cotter and Gardner and Clark ran up stream and got across upon a log. I made a dash for the snagged mule, and by strong swimming managed to catch one of his feet, and then his tail, and worked myself toward the shore. It was something of a task to hold his head out of the water, but I was quickly joined by the others, and we managed to drag him out by the head and tail. There he lay upon the bank on his side, tired of life, utterly refusing to get upon his feet, the most abominable specimen of inertia and indifference. While I was pricking him vigorously with a tripod, the ground caved under my feet and I quickly sank. Cotter, who was standing close by, seized me by the cape of my soldier's overcoat and landed me as carefully as he would a fish.

Should you visit this map in person at the UW-Madison Robinson Map Library, you can still detect where generations of student's palms rubbed the paint away from El Capitan and Half Dome. This model used to hang on the second floor wall at the top of the landing, right at eye level. Perhaps a swipe at El Capitan was for good luck before a wicked geography test?