Room Five: Reconstructing a New City

The Science of Earthquakes

Until 1906, American scientists believed that earthquakes posed little threat to human life. The 1906 temblor, however, quickly changed this long-held scientific belief, convincing many scientists of the importance of a concerted scientific study on the earthquake. Responding to the entreaties of Andrew Lawson, a professor of geology at the University of California, Governor George Pardee established a State Earthquake Investigation Commission only three days after the earthquake.

Serious study of an earthquake had been tried before in California following the 1868 quake, but that commission suffered from insufficient funds. The 1906 commission, however, benefited from the recently established Carnegie Institution, which provided $5,000 for research expenses. The commission's charter provided for eight members but only two had studied earthquakes with any seriousness. The initial commission eventually divided into three sub-committees dedicated to studying surface changes, geophysics, and the earthquakes arrival time at various locations. The committee eventually called on the services of twenty-one other scientists, including Fusakichi Omori, professor of seismology at the Imperial University of Tokyo. Omori's participation was important as Japan was then the center of seismological studies, having established a Seismological Society in 1880. An American seismological society would not be established until August 1906.

The commission's most helpful contributions were its mapping of the San Andreas fault and its explication of the Harry Fielding Reid's elastic rebound theory. The fault-line mapping was achieved through the efforts of two groups. North of the Golden Gate, Grove K. Gilbert walked much of the fault, amassing a valuable collection of photographs and field-notes. Gilbert's meticulous work was not equaled in the south, however, as J.C. Branner's Stanford graduate students were less diligent
and precise in their observations. Reid's elastic rebound theory was important because it explained that the earth's crust could move along a fault line without an earthquake occurring, thus creating tension. This tension could only be relieved during a huge earthquake. These contributions among others helped mark the study as a valuable achievement in earthquake studies. In many ways, the commission's report remains a primary reference today.

Gilbert and Branner's students photographed the fault throughout northern and southern California. As this photo demonstrates, the fault displayed its course through torn landscapes, displaced fences, and collapsed structures.