earthquake-proof as modern engineering can make them.

This is a lesson that should have been learned from the disasters at San Francisco and Tokyo. Unfortunately, it will probably require many more earthquakes, many of them of much greater severity than this one, to cause men to refrain from erecting death traps over their very heads. For earthquakes will continue to occur in California as well as in other parts of the surface of the globe.

Near the railroad station at 6:44 A.M. there was a handsome hotel recently erected at a cost of some $200,000. At 7:04 its guests found themselves exposed to public view on three sides of the structure. The shock had simply sliced the brick walls from the frame of the building. Such instances may be multiplied many times.

Yet Prof. Bailey Willis, president of the Seismological Society of America, who was in Santa Barbara and experienced the quake, says that it was a moderately severe, but not a very severe, shock, and that it is not a shock in which any decently built house should come down.

That the shaking was comparatively slight I can personally attest, for I had the great privilege of going through this earthquake totally unconscious of what was happening. I was asleep. I was on the last overnight Southern Pacific train to pass through Santa Barbara before the shock. At the instant of the first shock this train had reached three miles south of Santa Barbara, where it was nearly derailed by the force of the earthquake. The engineer stopped until the six severe shakes within nineteen minutes had passed away, and then proceeded cautiously toward Los Angeles. I supposed that the motion was due to normal train operations and slept through it all. The reports of the other passengers caused me to hurry back to Santa Barbara on the first Red Cross relief train leaving Los Angeles.

In spite of the coincidence of the two earthquakes, seismologists declare that there is no relation between the Montana shocks of Saturday and Sunday, and those at Santa Barbara. Both of these disturbances will, however, be the subject of detailed investigation by competent scientists.

EARTHQUAKES LIKE SAFETY VALVES SAYS SCIENTIST

Eight to ten thousand earthquakes are recorded every year in various parts of the world, and probably four times as many as this occur, but far from being alarming this is a very reassuring fact, Dr. William Bowie, of the U.S. Coast and Geodetic Survey says. This is because the earth is thus shown to be a body capable of yielding to stresses and strains. If it were not the case, the strain would accumulate until great enough to produce disruptions far more violent than any that have ever occurred, and perhaps sufficient to wipe out all the works of man.

While the earthquake in California followed so closely upon the heels of the one in Montana, this is only a coincidence, said Dr. Bowie, and there was no direct connection between them, except that the shock of the Montana quake might have been the trigger to set off the one in California. This could not have occurred, however, unless the conditions had been ready for a tremor, and any one of a number of things might have been the last straw. Dr. Bowie thinks it possible that the rising of the tide might do it, as a depth of water of

only eight feet, when extended over an area of hundreds of square miles, would exert a preasure of millions of tons.

The real cause of earthquakes, he said, is erosion, by which rains carry soil from mountains to valleys, and sedimentation, by which rivers and streams carry material to their mouths and deposit it there. These work gradually, but in time the amount of material moved is enormous, and the distribution of weight on the earth's surface is greatly altered. Because of the earth's ability to yield, the crust gives, and a fault, or crack, develops, along which future quakes may occur. A recognized fault passed through Santa Barbara, and is shown on a map issued by the Seismological Society of America showing the California faults. The Santa Barbara fault was supposed to be dead, however, as no tremor had occurred along it within historic times. The famous San Andreas fault, which caused the San Francisco earthquake in 1906, extends for many hundreds of miles, but does not pass near Santa Barbara.

In spite of the great damage done by the California shake, it was not nearly as violent as the one in Montana, said Commander N.H. Heck, in charge of the Coast and Geodetic Survey's seismological investigations. This was indicated by the seismograph records obtained by the Survey's stations at Cheltenham, Md., and Tucson, Ariz., as the records of the Montana quake were much more distinct, and was borne out by the reports of the area affected. In California, only about four counties felt the tremors, while three states besides Montana were shaken.

CIVILIZATION'S ADVANCE WIPES OUT MANY WORLD'S SMALLEST CREATURES

The struggle of man with nature and civilization's consequent advance is wiping out many small and microscopic plants and animals just as it has meant death to the buffalo, the carrier pigeon, the fringed gentian, the moccasin flower, and dozens of other animals and plants.

As the result of a survey, Dr. Henry B.Ward of the University of Illinois has found that the destructive activities of man affect the minute organisms which form the fundamental food supply of larger forms.

"In connection with the extensive and in part unavoidable destruction of breeding and feeding grounds to provide for the improvement of the land and the maintenance of a larger population", said Dr. Ward, "is added a little appreciated but exceedingly pernicious influence. Aquatic organisms of all sorts are affected by the extensive pollution of streams and lakes by city sewage and manufacturing wastes. Once that the public is educated to a comprehension of these unnecessary losses, it will insist upon the proper care of such wastes at the source.

"The irrepressible conflict of a growing civilization with a rich fauna shows many changes that were unavoidable and includes also much wanton destruction of valuable natural resources.

"The early records of pioneers and explorers portray vividly the marvelous richness of the North American fauna. Multitudes of wild mammals on the land, birds in the air, and fish in the water furnished a varied food supply for settlers that did not disappear in many regions until fifty years ago. The total extermination of some species and the impending destruction of many other forces consideration of the proper methods for the conservation of our biological resources.