

THE SAN JACINTO EARTHQUAKE.

BY PROF. CHAS. FRED. HOLDER.

The San Jacinto earthquake, on Christmas morning, was the severest earthquake since that of Fort Tejon in 1857. There seems to be a remarkable diversity of opinion as to the number of shocks, the duration and the direction of the wave; the fact that there is no seismograph in or about Riverside County explaining the lack of definite data. I was in Pasadena, and was awakened at four twenty-five. I endeavored to catch the direction of the waves during probably four or five seconds, then being urged to leave the room I rose and walked out into the hall and stood a few seconds. I could not distinguish a wave motion. The dishes were hopping up and down in the butler's pantry below, while every picture in the house was swinging in an altogether uncanny manner. Thinking that it might be a dangerous earthquake I threw open the window, expecting to hear the crash of stone or brick buildings, but by that time the shock had ceased. I judged that it lasted nearly half a minute, though this is supposition.

Experiences differ materially. A friend not far away stated that he was almost thrown down and noticed three distinct waves, while the sensation conveyed to me was that the house had been seized and shaken violently. Little or no damage was done in Los Angeles County, or in San Diego, where a small tidal wave was noticed. The maximum force of the earthquake centered at San Jacinto, about eighty miles from Los Angeles, a thriving little town, with a population of twenty-five hundred, in a ranching district, and a part of Riverside County. It stands at the foot of a lofty mountain, called Tarquitz by the natives, the Saboba Indians, who have a legend that it always gives warning of an earthquake by a roaring or bellowing; and these subterranean sounds were heard a week or so previous to the earthquake. In the immediate vicinity are sulphur and hot springs.

Earthquakes, at least small ones, are not uncommon at San Jacinto, and at the present time—December 28—the stricken towns have experienced several slight shocks every day since the 25th, which has aided in keeping up the suspense and demoralization into which the people were thrown. The shock came at 4:29 A. M., and according to many at both Hemet and San Jacinto, lasted a minute, though probably a half minute was nearer the actual duration. There was no warning; the shock came and continued, and almost every brick and stone building in the towns mentioned was either thrown down or partially ruined, and in half a minute or less, the entire population was in the street; women panic-stricken and men frightened and demoralized with the roar of falling bricks and the crash of timber. There were no lights, and the people groped about in darkness, fearing to go back to their damaged homes, and many passed the remaining time until daylight out of doors, when the full work of the earthquake was seen. While not thrown down, almost every building of brick in the business portion of the town of San Jacinto was wrecked. Fronts, backs or corners fell in, and a general view up Main Street, San Jacinto, conveys the impression of a wreck more or less complete, bricks and other material in some instances being thrown far into the middle of the street.

A singular feature of the damage is seen in the San Jacinto Bank. The top of this building was jerked away, and the right hand upper corner wall thrown into the street.

In the opposite end of the same block the injury is duplicated, the corners apparently receiving the force of the wave. In the County Hospital, which was recently erected at an expense of \$10,000, the front of one large room was thrown violently down into the street, and the whole building wrecked.

At Hemet some walls, as in the Johnson block, fell outward; others, as the second story of the Hemet

mill, fell in. There was evidence of a rotary motion at various places, which several persons testified to. In Hemet but two chimneys stand, and the business portion of the town is badly damaged. The hotel was injured to the extent of twenty-five thousand dollars, and is, in all probability, a total wreck. In the town of Corona the shock was severe and many of the brick buildings were damaged. At the Highland State Asylum for the insane the gables were cracked and chimneys fell.

The most remarkable feature of this earthquake was that so few lives were lost. From the accompanying photographs, which were taken by Frederick H. Rogers, of San Jacinto, it will be seen that the buildings on each side of Main Street were virtually ruined; yet not a person was killed and but few injured. The only fatalities were at the Indian Reservation of Saboba. Here the Indians had collected and were celebrating the approach of Christmas by a dance, and a room with adobe walls, in which were eight old squaws, fell in, killing them all. Some of the escapes were marvelous.

The clerk of the Hotel Hemet was covered in bed by the chimney, which came crashing through the roof,

been riveted with steel, as all stone buildings should be in California, the wreck would not have occurred. The towns visited are situated in a rich ranching region, and in a few months all traces of the earthquake will have been removed, and perhaps almost forgotten, as it is a somewhat singular fact that while an earthquake is dreaded, people who suffer do not desert the place, especially in Italy, where villages flourish on the site of the ancient lava flows of Vesuvius. The effect of the earthquake upon the surrounding country is not apparent, but there were undoubtedly some changes. Miners who have come in since report that a boulder weighing many tons was seen rolling down the mountain side, narrowly escaping a mill by a few feet. The hot springs near San Jacinto took on for the time new energy, while the fumes of sulphur have increased so that it has been almost impossible to approach them.

Agriculture in the Yukon.

Vice-Consul Morrison, of Dawson City, sends, under date of October 16, 1899, a report on the results of agricultural experiments, written by a resident of that city, which reads, in part, as follows:

"Grain has done exceptionally well, being well filled, and I see no reason why it should not be extensively and successfully grown here. As far as my observations go, the climate here is as suitable for raising winter wheat as in any place in the Northwestern or the Northern States of America. From my experience of the last two years, I see no reason why this country should not be able to produce its own vegetables and grains.

"As for flowers, the success I have had proves that all hardy annuals will do well. The coming year I intend planting several hundred hybrid roses; also summer flowering bulbs, a large variety of other hardy and half-hardy annuals, and some of the hardy perennials. Small fruit, such as strawberries, currants, blackberries, and raspberries, should do well. Currants, raspberries, cranberries, strawberries, and blueberries grow wild here."

The Current Supplement.

The current SUPPLEMENT, No. 1254, has many articles of unusual interest. "The History and Present Development of Wireless Telegraphy" is by Greenleaf W. Pickard. "The Home-made Windmills of Nebraska," by Erwin Hinckley Barbour, is illustrated by thirteen engravings and is a most valuable treatise on the subject. "The Geology of the Klondike Region" is by J. B. Tyrrell. "The Bad Lands of North Dakota" is by Prof. Ralph S. Tarr. "A Comparative Study of the Physical Structure of Labrador Eskimos and New England Indians" is an illustrated lecture by F. Russell, Ph.D., of Harvard University, and is accompanied by elaborate engravings. "Cycle Construction and Design," by Archibald Sharp, is illustrated by 12 cuts. "Reminiscences of Bunsen and the Heidelberg Laboratory" is by Dr. H. C. Bolton.

Contents.

(Illustrated articles are marked with an asterisk.)

Armored trains.....	18	Map, gigantic.....	21
Automobile news.....	22	Notes and queries.....	29
Books, new.....	28	Oil engine*.....	21
Century, new.....	18	Photography, congress of in 1900	15
Chromium, nitrogen dioxide of...	20	Plants, carbon dioxide absorbed	26
Earthquakes of San Jacinto*.....	27	by.....	26
Electrical notes.....	23	Platinum prints, reinforcing.....	17
Electric pump*.....	20	Power station*.....	17, 26
Engineering notes.....	23	Rail wagons*.....	25
Fish, electric.....	18	Science notes.....	22
Fossil, discovery of.....	24	Scientific American in South	
Fossil remains, unearthing.....	18	America.....	26
Geological Society of America.....	19	Telegraph, inventor of.....	22
Inventions, index of.....	28	Tool grinding machine*.....	21
Inventions recently patented.....	29	Trousers clasp*.....	22
Labor, unit of.....	22	Windmills of Nebraska, home-	
Lubricator, locomotive*.....	22	made*.....	24
Manila hemp.....	24	Yukon, agriculture in the.....	27



F. H. Rogers, photo., San Jacinto, Cal.

RUINS OF THE COUNTY HOSPITAL.



F. H. Rogers, photo., San Jacinto, Cal.

EARTHQUAKE IN CALIFORNIA—WRECK OF A HARDWARE STORE.

filling half the room. Another chimney fell and covered the bed in which a woman and child lay; yet they were uninjured. Another woman, who had been awakened and was wishing her husband a merry Christmas, started out of the bed in time to see the front of the building fall outward, leaving the bed on the edge. In Hemet singular injuries are seen. In the McKie block the top of the front wall was jerked out. The bank in the Hemet building lost its fire wall on one side; the other being badly cracked. In this block was the Prugh crockery store, and the crockery was piled up in the center as though a whirlwind had struck it. An inhabitant of Hemet informed me that the chimney of her house was lifted and turned partly around, as though by a whirling motion, but not thrown down. The Johnson block was practically ruined.

In the streets of Hemet small fissures or cracks were visible, being larger in the direction of San Jacinto. The pipes of the Hemet Water Company are cracked or broken in numbers of places, but it is believed that the Hemet dam is uninjured. While great loss has fallen on this locality, the people are by no means discouraged, and have already commenced to rebuild their homes. Doubtless, if the brick buildings had

England Indians" is an illustrated lecture by F. Russell, Ph.D., of Harvard University, and is accompanied by elaborate engravings. "Cycle Construction and Design," by Archibald Sharp, is illustrated by 12 cuts. "Reminiscences of Bunsen and the Heidelberg Laboratory" is by Dr. H. C. Bolton.