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THE GREAT EARTHQUAKE.

Day by day, for the last week, earthquake shocks of gradually decreasing intensity have disturbed Charleston, and at last it seems as if the earth has approached its condition of repose. The total number of disturbances has been very large, but the great damage was done by the first one. Mayor Courtenay, of Charleston, returning from Europe, received from the pilot that boarded the Etruria his first news of the disaster that had befallen his city. The loss has been estimated very differently by different authorities. The general consensus places it in advance of the figures given by us last week; \$5,000,000 is the amount of damage to buildings and \$500,000 to furniture and personal property, according to the estimates of Mr. William Aitken Kelley, the City Appraiser. Mayor Courtenay coincides substantially with this estimate. The death list has not been greatly changed; several additional deaths from exposure have slightly increased it. According to all authorities, no more shocks of any severity need be apprehended. The latter disturbances bear somewhat the same relation to the original that the last ripple caused by a passing steamer bears to the first violent waves. The first shock indicated the progress of the earth toward settlement; and subsequent shocks have marked the dying away of the agitation. From the above comparison, it must not be surmised that each movement represents a wave of the same series. All we know is that, as a rule, the first or an early shock is the worst. No tidal wave at this late date is at all to be anticipated.

The present dread is of rain; the need is for shelter. Tents are in great demand and seem to be hard to obtain. The return of confidence is rapidly doing away with this necessity. Buildings are being repaired, and masons and carpenters are hard at work everywhere. Soon the houses will be reoccupied. Recurrence of rain is, however, greatly to be feared, as it will cause great suffering among those who are without shelter, or who have only tents to live in.

The fact having been established that the earth movement was not of sufficient intensity to quite destroy the majority of houses, many have suggested that the proper course to pursue in an earthquake is to remain within doors, and take shelter in an inner doorway, so as to be secure from falling plaster. As it is merely a question of degree how far the destruction will go, it is to be doubted if this is good advice.

Naturally, the greatest damage was done to brick buildings. Their inelasticity caused them to be cracked and overturned. Brick chimneys, in falling, were also a source of loss and damage. Hitherto, a statute has forbidden the erection of wooden houses. A movement now is impending to petition the legislature to do away with this restriction. The demand upon the real estate agents is for wooden houses, people fearing to establish themselves in brick buildings. The fire of August 31 seems to be forgotten by those who advocate this plan. Had the houses of Charleston been built of wood, there would be little left of the city, in all probability, to-day. The fire that destroyed so many buildings, if wood had been the prevailing material of construction, would have spread everywhere unchecked, as no efficient work could have been anticipated from the fire department during the scenes of panic.

Even the animals were affected, and, in some cases, were more frightened, to all appearances, than were human beings. The horses from one of the engine houses ran away in the wildest terror, and were not found again until the next morning. The surrounding country has furnished similar accounts of the behavior of domesticated animals.

A sensible departure in rebuilding the city, is suggested in the substitution of terra cotta for brick in the construction of chimneys. These would be more resistant, and, if destroyed, would do less damage in falling.

One of the difficulties of the situation has been to determine which houses could be reoccupied, and which ones required demolition. To meet this need, a committee including W. E. Speir, architect and inspector of public buildings, United States Treasury Department; Captain W. H. Bixby and Lieutenant F. V. Abbott, United States Engineers' Department; Louis J. Barbour, City Engineer; and John Devereaux, architect and superintendent of the United States Custom House wharf, Charleston, has been appointed chiefly to examine and condemn dangerous houses and property.

As was to have been expected, contributions are pouring in from all sides, and with her natural resources and manufacturing industries the city will soon be on the road toward a recuperation of her losses. The city has shown great increase in prosperity recently. From 1880 to 1883, manufacturing capital increased from \$1,718,300 to over \$6,000,000, while production and hands employed nearly quadrupled in amount and number. Charleston rock, the great natural phosphate of this country, was the basis of this advance, most of the factories being devoted to the production of superphosphates and other artificial fertilizers. The city is fortunate in having her own deposits of phosphate to draw upon, being thus a producer as well as a manufacturer of her great staples.

On the evening of Wednesday, September 1, Prof. Dawson, Principal of McGill College, Montreal, read a paper touching on earthquakes before the British Association for the Advancement of Science, then in session in Birmingham, England. It consisted of an exhaustive review of the geological formation of the bed of the Atlantic, with especial reference to its bearing upon the question of earthquakes. The paper was highly praised and regarded as a valuable contribution to the discussion, but within a day came the full account of the Charleston upheaval, and Prof. Dawson immediately made the following confession:

"The phenomena of the present earthquake convulsions in America and elsewhere, but particularly in America, are extremely puzzling, and completely upset some of the conclusions set forth in the address I read last evening."

The high standing of Prof. Dawson, recognized as one of the leading geologists of the world, and the retraction, in the light of natural events, of his views expressed a few hours before, forcibly illustrate our ignorance as regards earthquakes. If they could only be considered in the correct light, as infinitesimal disturbances of the earth's surface, speculation concerning their origin would be less freely indulged in. A depression of the land enough to have submerged Charleston into the sea would only have involved a lowering of surface equal to about one three-hundred-thousandth of the earth's diameter. Making the same comparison with reference to what did take place, it will be found that the surface was agitated far less than one fifty-millionth part of the diameter. A proportional diminution on a twenty inch globe would be about one-fiftieth or one-twentieth the thickness of a piece of gold leaf, or, referred to a sheet of paper, a thousandth of the above fraction.

In other words, regarded as cosmical disturbances, earthquakes are almost too small to be intelligently theorized about. Their disastrous effects on humanity may be very great; but referred to the earth's dimensions, they amount to very little at the present day.

From general reports and the observations of the Government scientists, Director Powell concludes that the earthquake had its center in North and South Carolina, to the northeast of Charleston. The land area of the earthquake was one-third of the total area of the United States, and the maps which have been prepared show that the shock traversed this distance in fifteen minutes.

RARE MONKEYS.

Five new members of the monkey collection were placed on exhibition last week in the Museum of Natural History in the New York Central Park. All of these are rare, as may be judged from the fact that the Rochester agency, which contracted to furnish specimens of each known variety, and is paid only as it delivers them, has been four years getting the curious group of the family Simiadae now for the first time on exhibition here.

The ring-tailed lemur (Lemur catta) is from Madagascar. It has thick gray fur, slightly shaded with brown along the shoulders and flanks, and mostly white on lower surface. The tail is two feet long, prehensile, heavily furred, and spotted with white. The specimen is two feet exclusive of tail, and has a rather pointed, fox-like nose.

No. 2 embraces a group of very variable lemurs (Protilhecus verreaux). The coloring of these is from a pure white to a deep red.

No. 3 is a black monkey with a brown head (Semnopithecus johnii), three feet long, tail slender and as long as body. It is from India, and was captured by Taxidermist Hornaday, of the National Museum at Washington.

Nos. 4 and 5 are rare specimens of the little marmoset or quiral monkey of Brazil.

Those unfamiliar with the monkey family, who are sufficiently interested to visit this collection, will discover that while none of the Old World monkeys have short tails, American members of the family are not thus restricted to the one fashion, some wearing long and some short tails.

They will observe, further, that the Old World monkeys have cheek pouches for the temporary storage of food, and callosities on either side of them, while those of the New World have neither the pouches nor the callosities, but are characterized by the width between their nostrils.

Peroxide of Hydrogen.

The use of peroxide of hydrogen, commonly called oxygenated water, is extending for bleaching purposes. It will be remembered that some years ago the fair sex rendered this product somewhat popular by partially bleaching their hair with it, but the product has now emerged from this fashionable employment into the more common and perhaps more useful application for industrial purposes, being now employed for the bleaching of feathers and also of tussah silks, for which it is admirably adapted.