ABOUT EARTHQUAKES.

Those mild yearnings of terrestrial bowels which are felt periodically in California, and recently "shook up" our dear Oregon, can hardly be called earthquakes, though the term admits of no degree of comparison. These demonstrations which engulf a city or break the china on the kitchen dresser, has but one word to describe it. There is no doubt that our Pacific Coast earthquakes are miserably deficient in sincerity and other positive qualities. They may be confounded with the rumbling of distant wheels, or a passing gust of wind, and are not felt outside the walls of our dwellings—which latter are not in themselves types of perfect security. People are very apt to think little of the force that shakes the walls of their tenements who are familiar with the daily spectacle of two-story dwellings propelled quietly through the thoroughfares of their city. Your true earthquake, on the contrary, is apt to upset all preconceived theories of stability, attacks people on the street, grips the ground under their feet with a firm hand, and overthrows with them such time-honored figures of rhetoric as "the sure and firm set earth," *terra firma* and the like.

It may be, however, that even such equivocal demonstrations as are felt on this coast, are sufficient to satisfy some people. The theory of gravitation was probably made as patent to Newton by the fall of the pippin as if he had been "bonnetted" by a boulder. But when we finished the reading of the reporters' account of the latest earthquake, it occurred to us that it may be instructive to turn back to the description of another, which unfortunately left few intelligent survivors to record it. The earthquake at Lisbon on the 1st of November, 1755, was of such a character.

The weather for some days previous to the fatal event had been clear and very warm for the season, and the morning of the 1st of November itself was ushered in with a brilliant sun and a cloudless sky. A few minutes after nine o'clock, a rumbling noise was heard like distant thunder, which gradually increased until it excelled the loudest roar of cannon; and then occurred the first shock. It shook the city to its foundations, and overwhelmed the inhabitants with consternation. The houses waived to and fro with such violence that the upper stories immediately fell, and crushed their occupants and the passengers in the streets to death. The motion of the earth was so vehement that it was impossible to stand upright, and the effects of so unexpected and frightful a concussion were rendered doubly terrific by a thick gloom which overspread the light of day. Thousands rushed into the streets to escape being buried in the ruins of their dwellings, and made their way over heaps of rubbish to the great square in front of St. Paul's church, to be out of the reach of falling stones.

The great church of St. Paul's itself had fallen, and involved an immense multitude in its destruction. The 1st of November was the festival of All Saints, and from an early hour the churches had been crowded with devotees and ecclesiastics. Most of these, in the act of religious worship, were at once killed or miserably mangled. Such of their congregations as escaped, including many dignitaries of the church in their episcopal and purple garments, rushed to the side of the river as to a place of comparative safety. Priests in their sacerdotal vestments, ladies half dressed or with tattered clothes, and an immense concourse of people of all ranks and ages, were here assembled, supplicating Heaven upon their knees, and with agonizing shouts repeating their *Miseracordia meu Dios*. In the midst of their anguish and their devotions, the second great shock came on, nearly as violent as the first, completing the work of destruction. The general consternation was at its height, and the shrieks and cries of *Miseracordia* resounded from one end of the town to the other. The church on the top of St. Catharine's Hill, after rocking to and fro, fell with a tremendous crash, and killed great numbers who had sought protection on that eminence. But the most terrible consequence of the second shock fell on those at the water's side. On a sudden, the river, which at that part is four miles broad, was observed to heave and swell in a most unaccountable manner, since no wind was stirring at the time. In an instant there appeared at some small distance a large body of water rising like a mountain, which came on foaming and roaring, rushing towards the shore with fearful impetuosity. The crowd attempted to retire before it, but the motion of the water was too quick to permit escape in so dense a throng. The volume of water burst upon them, and sucked back into its tremendous vortex, amid shrieks and wailings, the defenceless multitude. A magnificent quay that had been recently built of rough marble at a vast expense, was at this moment entirely swallowed up with all the people on it who had crowded there for refuge. Numberless boats and small vessels, likewise, which were anchored near it, and were full of persons who had thrown themselves into them with the idea that the place of greatest safety was on the water, were all swept away, leaving no trace behind.

In the meantime, the ships in the river were tumbled and tossed about as in a storm; some broke their cables and were carried to the other side of the Tagus; others were whirled round with incredible swiftness; several large boats were turned keel upwards; and all this terrible commotion occurred without any wind, which rendered it the more astounding. According to the account of a shipmaster who encountered the concussion and survived its dangers, the whole city of Lisbon, as surveyed from the river, was waving backwards and forwards like the sea when the wind first begins to rise; that the agitation of the earth was so great, even under the river, that it threw up his large anchor from the mooring, and carried it to the surface of the water; and that immediately the river rose near twenty feet, and as instantly subsided. Upon this event he saw the quay with the whole concourse of people upon it sink down, and at the same time every one of the boats and vessels near it was drawn into the cavity, which instantly closed upon them, so that not the least sign of a wreck was ever seen afterwards. It is worthy of remark, that this noble quay was the only place in Lisbon that was entirely swallowed up, the destruction in other parts only amounting to demolition.

After all the devastations and horrors of the two preceding shocks, the measure of misfortune might seem at its full. But a third shock was still in store to complete the misery of the wretched population. It was somewhat less violent than the two former, though the water rushed in again and retired with the same rapidity. Such was the impetuosity with which the river was moved, that some vessels were cast upon dry ground that had ridden in seven fathoms of water. This alternate rising and sweeping back of the waters was repeated several times, committing on each occurrence extensive injury and destruction. At this period it was generally believed that the city of Lisbon was doomed to be entirely swept from the face of the earth.

But the earthquake had now completed its ravages, and gave place to a raging element not less inexorable and desolating. In a hundred places at once the flames burst forth with such fury that the whole city appeared in a blaze. The commencement of the conflagration was owing not so much to the discharge of subterranean fires, which issued from fissures in the earth, as to other circumstances which rendered it inevitable. As is usual in Catholic countries on days of high festival, every altar in every church and chapel was illuminated with wax tapers and lamps, and these falling with the curtains and timber work during the convulsion, soon gave a beginning to the fire. The neighboring buildings caught the flames already kindled by kitchen and other fires in private dwellings, and spread them throughout the city. The destruction of life and property during the conflagration was almost equal to that caused by the earthquake, since it was six days before it was finally arrested and extinguished. The total loss of life in these several disasters is estimated variously at from 30,000 to 60,000 souls.

To enumerate and treat in detail all the great shakes of history would require more time and space than the limits of a newspaper article afford. But the earthquake at Messina claims attention as a representative one, and cannot very well be dismissed in a paragraph. This city, situated between Mount Etna and the Charybdis, and at no great distance from the volcanoes of Lipari and Stromboli, must have been in all ages liable to suffer by earthquakes. It escaped tolerably well however from the earthquake of 1693, which destroyed a fourth part of the cities of Sicily, and also from the other convulsions to which that portion of the earth was subject until the year 1783. The autumn of the preceding year was unusually cold and rainy. Fahrenheit's thermometer was often as low as 56 degrees. The succeeding winter was dry; and the mercury never fell under 55 degrees: and what is uncommon in that season, storms were now and then observed to rise from the west. The pilots in the channel observed that the tides no longer rose at their usual periods, and the gulf of Charybdis raged with extraordinary fury. On the 5th of February, 1783, the air was heavy and calm; the sky obscured with thick clouds, and the atmosphere seemingly all in a flame. About half-past twelve at noon, the earth began to shake with a dreadful noise. The shocks continually increased, and became at length so violent as to open the ground, and to overturn, in two or three minutes, a considerable part of the buildings. A long white cloud appeared to the northwest; and soon after another, very dark, in the same quarter of the heavens. The latter in a moment spread over the whole horizon, and deluged the city with rain and hail, accompanied with dreadful claps of thunder. The inhabitants fled in the utmost terror to the fields and the ships in the harbor. From midday till five in the afternoon the earthquakes continued almost without interruption. The shocks then became somewhat less frequent. The cries of the dying; the shrieks of those who were half buried under the ruins; the wild terror with which others, who were still able, attempted to make their escape; the despair of fathers, mothers, and husbands, bereft of those who were dearest to them; these formed altogether a scene of horror, such as can but seldom occur in the history of the calamities of the human race. Amid that awful scene, instances of the most heroic courage and the most generous affection were displayed. Mothers, regardless of their own safety, rushed into every danger to snatch their children from death. Conjugal and filial affection prompted deeds not less desperate and heroic. But no sooner did the earthquake cease than the poor wretches who had escaped began to feel the influence of very different passions. When they returned to visit the ruins, to seek out the situation of their fallen dwellings, to inquire into the state of their families, to procure food and collect some remains of their former fortunes—such as found their circumstances the most wretched suddenly became animated with rage, which nothing but wild despair could inspire. The distinction of ranks and the order of society were disregarded, and property eagerly violated. Murder, rapine, and lawless robbery, reigned among the smoking ruins.

The succeeding day scarcely alleviated the distress of this dreadful night: the few wretches who still survived, found themselves destitute of every necessity. At length order was in some degree re-established; and in two days after every person was supplied at least with some small portion of the necessaries for subsistence. But none as yet thought of returning to take up their abode among the ruins. The common people fixed their residence on the plain of Porto Salvo, near the town of Salleo; the nobles, magistrates, and merchants, on another plain, on the other side of the stream Porto de Legno; and the soldiers at Terra Nuevo. Some violent shocks, which were again felt on the 15th of February and the 28th of March, almost completed the destruction of the city. The corn magazines, however, escaped without damage; and the public ovens and the aqueducts were but little injured. From these facts it may perhaps be inferred that, had not the houses of Messina been, in general, hastily built at the first, and afterwards carelessly repaired, fewer of them would have been overthrown by the earthquakes.

This earthquake was not of a momentary duration, like that by which Lisbon was destroyed, and many others. For more than sixty days, from the 5th of February to the beginning of April, Messina continued to be shaken, and at that time felt more than two hundred shocks; and even after that period the alarm was again and again renewed. The chief damage which the buildings within the city suffered was the fall of the dome of the Church of Purgatory. Only the walls were left standing; and even these had suffered considerably. One-half of the steeple of the cathedral was beaten to the ground. The magazines of Porto Franco were likewise very much shattered. The fort of San Salvador, being built on an artificial foundation, the side next to the sea there fell down; but on the other side, where it is founded on a rock, it stood unmoved by all the shocks of the earthquake.

Sir William Hamilton, who traveled into Calabria immediately after the earthquake, arrived at this ill-fated spot on the 16th of May, and his observations we shall here transcribe. He found that all the beautiful front of the Palazzetta, which extended in very lofty uniform buildings, in the shape of a crescent, had been in some parts totally ruined, in others less; and there were cracks in the earth of the quay, a part of which had sunk above a foot below the level of the sea. The howling of the dogs in the streets of Messina, a little before the earthquake were so loud and terrific, that orders were sent to kill them; and it is said that during the earthquake fire had been seen to issue from the cracks of the quay; but our author is persuaded that this, as in other cases, was a vapor charged with electric fire, or a kind of inflammable air. Here also he was informed, that the shock of the 5th of February had been from the bottom upwards; but the subsequent ones generally horizontal or verticose. A remarkable circumstance was observed at Messina, and through the whole coast of Calabria, which had been most affected by the earthquake, viz., that a small fish called cicirelli, resembling the English white-bait, but larger, which usually lie at the bottom of the sea, buried in the sand, had, after the commencement to the time this account was written, continued to be taken near the surface, and that in such abundance as to be common food for the poorest sort of people: whereas before the earthquake this fish was rare, and reckoned among the greatest delicacies. Fish of all kinds were also taken in greater abundance on these coasts after the commencement of the earthquake than before; which Sir William supposes to have been occasioned either by the volcanic matter having heated the bottom of the sea, or that the continual tremor of the earth had forced them out of their retreats.

The disastrous year of this earthquake was scarcely completed, the chasms which it had opened in the ground were still yawning, and the poor inhabitants of the adjacent country still trembled with terror, when the elements again renewed their fury to ravage this unfortunate land. On Tuesday the 6th of January, 1784, about sunrise, the wind began to blow softly from the northeast. The sea gradually swelled, rose beyond its bed with rapid impetuosity, overflowed the quay of Messina, and lashed with its billows the ruins of the Palazzetta. It loosened and displaced many of the stones of the mole, spread over the whole street, and attacked the pedestals of the statues, which had been spared by the earthquake and still stood firm among the ruins. The same furious wind which swelled the sea in so extraordinary a manner, ravaged the whole coast from Messina all the way to Syracuse.

The accounts of eye-witnesses—if this term can be applied to people in situations which tax the entire senses—possess a peculiar interest. The author of *Walsh's Travels*, who enjoyed an earthquake experience at Zante in the year 1820, gives the following idea how it feels:

"When the servant led me to my room, he left a large brass lamp lighted on a ponderous carved table on the opposite side to that on which I slept. My bed, as is usual in this island, was without a canopy, and open above. As soon as I got into it, I lay for some time gazing on the ceiling, with many pleasing ideas of persons and things floating on my mind; even the grotesque figures were a source of amusement to me; and I remember falling into a delightful sleep while I was yet making out fancied resemblances to many persons I was acquainted with.

"The next sensation I recollect was one indescribably tremendous. The lamp was still burning, but the whole room was in motion. The figures on the ceiling seemed to be animated, and were changing places; presently they were detached from above, and, with large fragments of the cornice, fell upon me and about the room. An indefinable melancholy humming sound seemed to issue from the earth and run along the outside of the house, with a sense of vibration that communicated an intolerable nervous feeling; and I experienced a fluctuating motion, which threw me from side to side, as if I were still on board the frigate, and overtaken by a storm. The house now seemed rent asunder with a violent crash. A large portion of the wall fell in, split into splinters the oak table, extinguished the lamp, and left me in total darkness; while at the same instant the thick walls opened about me, and the blue sky, with a bright star, became for a moment visible through one of the chasms. I now threw off my bedclothes and attempted to escape from the tottering house; but the ruins of the wall and ceiling had so choked up the passage that I could not open the door, and I again ran back to my bed, and instinctively pulled over my face the thick coverlid, to protect it from the falling fragments.

"Up to this period I had not the most distant conception of the cause of this commotion. The whole had passed in a few seconds, yet such was the effect of each circumstance that they left on my mind as distant an impression as if the succession of my ideas had been slow and regular. Still I could assign no reason for it but that the house was going to fall, till an incident occurred which caused the truth to flash at once on my mind. There stood in the square opposite the Palazzo a tall, slender steeple of a Greek church, containing a ring of bells, which I had remarked in the day; these now began to jangle with a wild, unearthly sound, as if some powerful hand had seized the edifice below, and was ringing the bells by shaking the steeple. Then it was that I had the first distinct conception of my situation.

"I found that the earthquake we had talked so lightly of was actually come. I felt that I was in the midst of one of those awful visitations which destroy thousands in a moment—where the superintending hand of God seems for a season to withdraw itself, and the frame of the earth is suffered to tumble into ruins by its own convulsions. I cannot describe my sensations when I thus saw and felt around me the wreck of nature, and that with a deep and firm conviction on my mind that to me that moment was the end of the world. I had before looked death in the face in many ways, and had reason more than once to familiarize me to his appearance, but this was nothing like the ordinary thoughts or apprehensions of dying in the common way; the sensations were as different as an earthquake and a fever.

"But this horrible convulsion ceased in a moment, as suddenly as it began, and a dead and solemn silence ensued. This was soon broken by the sound of lamentations, which came from below; and I afterwards found it to proceed from the inhabitants of an adjoining house, which had been shaken down, and crushed to death some, and half buried others who were trying to escape, in the ruins. Presently I saw a light through the crevice of the door of my chamber, and heard the sound of voices outside. It proceeded from the servants, who came to look for me among the ruins. As they could not enter by the usual doorway, which was choked up, they proceeded round to another; but when they saw the room filled with the wrecks of the wall and the ceiling, some of which were lying on the bed, one of them said, '*Sacramento! siccio schiacciato!*'—there he is,