

ground and prevented from escaping? When the roof above one of the volcanic fires falls into the molten mass below it, all the water contained in the fissures and cavities would be precipitated into the fire and be almost instantly raised into vapour, which, by its first effort, would form a cavity between the melted matter and the superincumbent rock. This rock would thus be first compressed, and then, on recovery, dilated, producing a vibratory motion at the surface of the ground, and partially occasioning the noise that accompanies an earthquake, though this may also be due to the grating of the parts of the earth together during the wave-like motion through them. The waves propagated through the earth are largest above their source of origin, and gradually diminish until they may only be detected by the motion of sheets of water and objects suspended from a height, as hanging branches and lamps in churches.

Michell further remarks that while earthquakes are frequent in mountainous districts, they are usually less extensive there than those which originate under the sea, and he thinks that far more extensive fires may exist below the ocean than on land, where the mass of material lying above them is less. In seeking to find the focus of origin of an earthquake, this acute writer points out that if lines be drawn in the direction of the observed track of the earth-waves through all the places affected, "the place of their common intersection must be nearly the place sought." He shows that the great Lisbon earthquake had its origin under the Atlantic, somewhere between the latitudes of Lisbon and Oporto. While admitting that a sufficient number