to the pressure of the burning lavas which shatter them. An awful subterranean roar preceded, by a few minutes, the disaster of Lisbon. But the great shock at Rio-Bamba, in February 1797, was not ushered in by any sound. A formidable detonation was heard under the soil of Quito and Ibarsa, two towns at a considerable distance from Rio-Bamba, but not until twenty minutes after the calamity. A quarter of an hour after the earthquake had destroyed the opulent city of Lima—October 28, 1746—a gust of subterranean thunder re-echoed at Truxillo. In like manner, it was not until long after the great earthquake in New Grenada, on the 16th of November 1827, which M. Boussingault has described, that subterranean reports were heard in the valley of Cauca.

[The subterranean noises accompanying or following earthquakes Sometimes they may be likened to the rumbling of a vary greatly. railway train through a tunnel, or of a series of waggons over the arches of a viaduct. Sometimes they resemble the echoes of thunder among the mountains; sometimes the explosion of a mine. Occasionally, they remind the hearer of the roll of a thousand drums; or the clinking of glass and porcelain, as if masses of vitrified rock had suddenly split asunder in the terrestrial cavities. They have also been compared to the sound of a mighty wind rushing through subterranean corridors; to the clanking of chains and the ringing of In point of intensity, they seem to vary from a comparatively bells. subdued muttering or grinding, to the awful battle-roar of two vast contending armies. In the latter case, it is probable an explosion actually occurs at a great depth below the surface; in the other instances, the sounds may be supposed to originate in the rending and splitting of the strata displaced by the "earth-wave."]

Physical science teaches us that solid bodies are admirable conductors of sound; the sonorous undulations are much more quickly transmitted through wood, metals, and rocks, than by the air or gases. Of this fact the reader may convince himself by placing a watch at one extremity of a beam, and applying his ear to the other extremity.