More recently Mr. A. Strahan has called attention to the occurrence of slickensided surfaces in the lead-mines of Derbyshire which on being struck or even scratched with a miner's pick break off with explosive violence, and he suggests that the spars and ores along those surfaces are in "a state of molecular strain, resembling that of the Rupert's Drop or of toughened glass, and that this condition of strain is the result of the earth movements which produced the slickensides." [39]

If such is the state of strain in which some rocks exist even at the surface or at no great distance beneath it, we can realize that at great depths, where escape from strain is for long periods impossible, and the compression of the masses must be enormous, any sudden relief from this strain may well give rise to an earthquake-shock (p. 475). A continued condition of strain must also influence the solvent power of water permeating the rocks (p. 521).

(2.) **Consolidation and Welding.**—That pressure consolidates rocks is familiar knowledge. Loose sedimentary materials may by mere pressure be converted into more or less firm and hard masses. Experiments by W. Spring upon many substances in the state of powder have shown that under high pressure they become welded into solid substances. Under a pressure of 6000 atmospheres, coal-dust becomes a brilliant solid block, taking the mold of the cavity in which it is placed, and thereby giving evidence of plasticity. Peat, in like manner, becomes a brilliant black substance in which all trace of the original structure is gone.[40]

(3.) **Cleavage.**—Over extensive tracts of country a peculiar structure has been superinduced by powerful lateral

[39] Geol. Mag. 1887, p. 400. See also the same volume, pp. 511, 522.
[40] Bull. Acad. Roy. Belg. 1880, p. 325, and ante, p. 249.