versed by vertical or highly inclined divisional planes termed *joints* (Book IV. Part II.). These have been regarded as due in some way to contraction during consolidation (fissures of retreat); and this is no doubt their origin in innumerable cases. But, on the other hand, their frequent regularity and persistence across materials of very varying texture suggest rather the effects of internal pressure and movement within the crust. In an ingenious series of experiments, Daubrée has imitated joints and fractures by subjecting different substances to undulatory movement by torsion and by simple pressure, and he infers that they have been produced by analogous movements in the terrestrial crust.[53]

But in many cases the rupture of continuity has been attended with relative displacement of the sides, producing what is termed a *fault*. Daubrée also shows experimentally how faults may arise from the same movements as have caused joints, and from bending of the rocks. As the solid crust settles down, the subsidence, where unequal in rate, may cause a rupture between the less stable and more stable areas. When a tract of ground has been elevated, the rocks underlying it get more room by being pushed up, and are placed in a position of more or less instability. As they cannot occupy the additional space by any elastic expansion of their mass, they accommodate themselves to the new position by a series of dislocations.[54] Those segments having a broad base rise more than those with narrow bottoms, or the latter sink relatively to the former. Each broad-bottomed segment is thus bounded by two sides sloping toward the

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[53] "Geol. Experim." Part I. sect. ii. chap. ii. See W. King, Roy. Irish Acad. xxv. (1875), p. 605, and the theories of jointing given in Book IV. Part II.

[54] See J. M. Wilson, Geol. Mag. v. p. 206; O. Fisher, op. cit. 1884.