among the more ancient, and especially more or less altered, rocks. These may be seen running in parallel lines, or ramifying into an intricate network, sometimes uniting into thick branches and again rapidly thinning away. Considerable variations in breadth may be traced in the same vein. These may be accounted for by unequal solution and removal of the walls of a fissure, as in the action of permeating water upon a calcareous rock; by the irregular opening of a rent, or by a shift of the walls of a sinuous or irregularly defined fissure. In the last-named case, the vein may be strikingly unequal in breadth, here and there nearly disappearing by the convergence of the walls, and then rapidly swelling out and again diminishing. How simply this irreg-

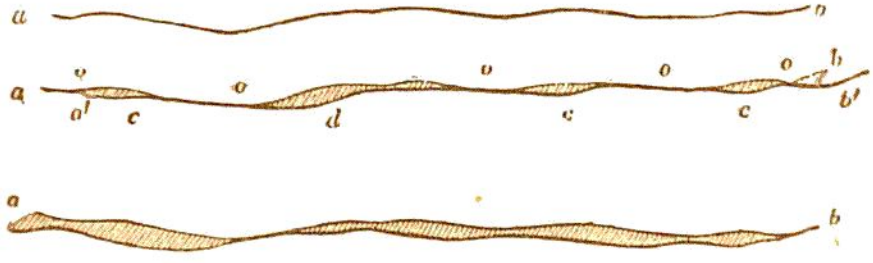

Fig. 312.—Widening of a fissure by relative shifting of its side (De la Beche).

ularity may be accounted for will be readily perceived by merely copying the line of such an uneven fissure on tracing paper and shifting the tracing along the line of the original. If, for example, the fissure be assumed to have the form shown at *a b*, in the first line (Fig. 312), a slight shifting of one side to the right, as at *a' b'* in the second line, will allow the two opposite walls to touch at only the points *o o*, while open spaces will be left at *c c d*. A movement to the same extent in the reverse direction would give rise to a more continuously open fissure, as in the third line. That shiftings of this nature have occurred to an enormous extent in the fissures filled with mineral-veins, is shown