traction of the inner hot nucleus of the globe, and the consequent descent of the cool upper shell, a subsiding area of the curved surface of the earth requires to occupy less horizontal space, and must therefore suffer powerful lateral compression. De la Beche long ago pointed out that if contorted and tilted beds were levelled out, they would require more space than can now be obtained for them without encroaching on other areas.[49] The magnificent example of the Alps brings before the mind the enormous extent to which the crust of the earth has in some places been compressed. According to the measurements and estimates of Prof. Heim of Zurich, the diameter of the northern zone of the central Alps is only about one half of the original horizontal extent of the component strata, which have been corrugated and thrown back upon each other in huge folds reaching from base to summit of lofty mountains, and spreading over many square miles of surface. He computes the horizontal compression of the whole chain at 120,000 metres, that is to say, that two points on the opposite sides of the chain have, by the folding of the crust that produced the Alps, been brought 120,000 metres, or 74 miles, nearer each other than they were before the movement.[50] Though the sight of such colossal foldings of solid sheets of rock impresses us with the magnitude of the compression to which the crust of the earth has been subjected, it perhaps does not convey a more vivid picture of the extent of this compression than is afforded by the fact that even in the minuter and microscopic structure of the rocks intricate puckerings are visible (Fig. 37). So intense has been the pressure, that even the tiny flakes of mica and

[49] "Report, Devon and Cornwall," p. 187.
[50] "Mechanismus der Gebirgsbildung," 1878, vol. ii. p. 213.