

And their conclusions will apply to natural bodies, of course, only so far as they conform to such a definition. In strictness of speaking, however, there are no bodies which absolutely conform to it. No substance is known whose parts are absolutely incapable of yielding one among another; but the amount by which they do yield is so excessively small as to be demonstrably incapable, in most cases, of having any influence on the results: and in those where it has such influence, an especial investigation of its amount can always be made. This gives rise to two subdivisions of the application of mechanical reasonings to solid masses. Those which refer to the action of forces on flexible or elastic, and on inflexible or rigid, bodies, comprehending under the latter all such whose resistance to flexure or fracture is so very great as to permit our adoption of the language and ideas of the extreme case without fear of material error.

(238.) In like manner, when we reason respecting the action of forces on a fluid mass, all we have occasion to assume is, that its parts are freely movable one among the other. If, besides this, we choose to regard a fluid as incompressible, and deduce conclusions on this supposition, they will hold good only so far as there may be found such fluids in nature. Now, in strictness, there are none such; but, practically speaking, in the greater number of cases, their resistance to compression is so very great that the result of the reasoning so carried on is not sensibly vitiated; and in the remaining cases, the same general principles enable us to enter on a special inquiry directed to this point: and hence the division of fluids, in mechanical language, into compressible, and incompressible, the latter being only the extreme or limiting case of the former.

(239.) As we propose here, however, only to consider what is the actual constitution of nature, we shall regard all bodies, as they really are, more or less flexible and yielding. We know for certain, that the space which any material body appears to occupy is not entirely filled by it; because there is none which by the application of a sufficient force may not be *compressed* or forced in-