can be carried by any force we can employ, compared with that of air, we must conclude that this repulsion is much more violent in the former than in the latter, but counteracted also by a more powerful force of attraction. So much more powerful, indeed, is the resistance of liquids to compression, that they were usually regarded as incompressible; an opinion corroborated by a celebrated experiment made at Florence, in which water was forced through the pores (as it was said) of a golden ball. More recent experiments by Canton, and since by Perkins, Oersted, and others, have demonstrated, however, the contrary, and assigned the amount of compression.

(255.) The consideration of the motions of fluids, whether liquid or expansible, is infinitely more complicated than that of their equilibrium. When their motions are slow, it is reasonable to suppose that the law of the equable distribution of pressure obtains; but in very rapid displacements of their parts one among the other, it is not easy to see how such an equable distribution can be accomplished, and some phenomena exist which seem to indicate a contrary conclusion.

(256.) Independent of this, there are difficulties of an almost insuperable nature to the regular deductive application of the general principles of mechanics to this subject, which arise from the excessive intricacy of the pure mathematical inquiries to which its investigation leads. It was Newton who set the example of a first attempt to draw any conclusions respecting the motion of fluid masses by direct reasoning from dynamical principles, and thus laid the foundation of HYDRODYNAMICS; but it was not till the time of D'Alembert that the method of reducing any question respecting the motions of fluids under the action of forces to strict mathematical investigation could be said to be completely understood. But the cases, even now, in which this mode of treating such questions can be applied with full satisfaction, are few in comparison of those in which the experimental method of inquiry as already observed (189.) is preferable. Such, for example, is that of the