

which imitates the movements of the stars cannot go long without winding up : but the stars themselves have gone on in their courses for ages, with no diminution of their motions, and offer no obvious prospect of any change. This is so palpable a fact, that the first attempts of men to systematize their mechanical notions were founded upon it. The ancients held that motions were to be distinguished into *natural* motions and *violent*,—the former go on without diminution—the latter are soon extinguished ;—the motions of the stars are of the former kind ;—those of a stone thrown, and in short all terrestrial motions, of the latter. Modern philosophers maintain that the laws of motion are the same for celestial and terrestrial bodies ;—that all motions are *natural* according to the above description ;—but that in terrestrial motions, friction comes in and alters their character,—destroys them so speedily that they appear to have existed only during an effort. And that this is the case will not now be contested. Is it not then somewhat remarkable that the same laws which produce a state of permanent motion in the heavens, should, on the earth, give rise to a condition in which rest is the rule and motion the exception ? The air, the waters, and the lighter portions of matter are, no doubt, in a state of perpetual motion ; over these friction has no empire : yet even their motions are interrupted, alternate, variable, and on the whole slight deviations from the condition of equilibrium. But in the solid parts of the globe, rest predominates incomparably over motion : and this, not only with regard to the portions which cohere as parts of the same solid ; for the whole surface of the earth is covered with loose masses, which, if the power of friction were abolished, would rush from their places and begin one universal and interminable dance, which would make the earth absolutely uninhabitable.

If, on the other hand, the dominion of friction were extended in any considerable degree into the planet-