

(299.) It had been objected to the doctrine of Copernicus, that, were it true, Venus should appear sometimes horned like the moon. To this he answered by admitting the conclusion, and averring that, should we ever be able to see its actual shape, it *would* appear so. It is easy to imagine with what force the application would strike every mind when the telescope confirmed this prediction, and showed the planet just as both the philosopher and his objectors had agreed it ought to appear. The history of science affords perhaps only one instance analogous to this. When Dr. Hutton expounded his theory of the consolidation of rocks by the application of heat, at a great depth below the bed of the ocean, and especially of that of marble by actual fusion; it was objected that whatever might be the case with others, with calcareous or marble rocks, at least, it was impossible to grant such a cause of consolidation, since heat decomposes their substance and converts it into quicklime, by driving off the carbonic acid, and leaving a substance perfectly infusible, and incapable even of agglutination by heat. To this he replied, that the pressure under which the heat was applied would prevent the escape of the carbonic acid; and that being retained, it might be expected to give that fusibility to the compound which the simple quicklime wanted. The next generation saw this anticipation converted into an observed fact, and verified by the direct experiments of Sir James Hall, who actually succeeded in melting marble, by retaining its carbonic acid under violent pressure.

(300.) Kepler, among a number of vague and even wild speculations on the causes of the motions, whose laws he had developed so beautifully and with so much patient labor, had obtained a glimpse of the general law of the inertia of matter, as applicable to the great masses of the heavenly bodies as well as to those with which we are conversant on the earth. After Kepler, Galileo, while he gave the finishing blow to the Aristotelian dogmas, which erected a barrier between the laws of celestial and terrestrial motion, by his powerful argument and caustic ridicule, contributed, by his investigations of the laws of