

signed them; and thus offer evidence of selection, design, and goodness, in the power by which they were established. But these characters of the legislation of the universe may also be seen, in many instances, in a manner somewhat different from the selection of the law. The *nature of the connexion* remaining the same, the quantities which it regulates may also in their *magnitude* bear marks of selection and purpose. For the law may be the same while the quantities to which it applies are different. The law of the gravity which acts to the earth and to Jupiter, is the same; but the intensity of the force at the surfaces of the two planets is different. The law which regulates the density of the air at any point, with reference to the height from the earth's surface, would be the same, if the atmosphere were ten times as large, or only one-tenth as large as it is; if the barometer at the earth's surface stood at three inches only, or if it showed a pressure of thirty feet of mercury.

Now this being understood, the adaptation of a law to its purpose, or to other laws, may appear in two ways:—either in the form of the law, or in the amount of the magnitudes which it regulates, which are sometimes called *arbitrary magnitudes*.

If the attraction of the sun upon the planets did not vary inversely as the square of the distance, the *form* of the law of gravitation would be changed; if this attraction were, at the earth's orbit, of a different *value* from its present one, the arbitrary magnitude would be changed; and it will appear, in a subsequent part of this work, that either change would, so far as we can trace its consequences, be detrimental. The form of the law determines in what manner the facts shall take place; the arbitrary magnitude determines how fast, how far, how soon; the one gives a model, the other a measure of the phenomenon; the one draws the plan, the other gives the scale on which it is to be executed; the one gives the rule, the other the rate. If either were wrongly taken, the result would be wrong too.