

nature in a remarkable degree comprehensive, and which contrasts strikingly with the confusion, vagueness, and assumption of his physical opinions and dogmas. In these it is easy to recognise a mind not at home, and an impression of the necessity of saying something learned and systematic, without knowing what to say. Thus he divides motions into natural and unnatural; the natural motion of fire and light bodies being upwards, those of heavy downwards, each seeking its kindred nature in the heavens and the earth. Thus, too, the immediate impressions made on us by external objects, such as hardness, color, heat, &c. are referred at once, in the Aristotelian philosophy, to occult qualities, in virtue of which they are as they are, and beyond which it is useless to inquire.* Of course, there will occur a limit beyond which it is useless for merely human faculties to inquire; but where that limit is placed, experience alone can teach us; and at least to assert that we *have* attained it, is now universally recognised as the sure criterion of dogmatism.

(102.) In the early ages of the church the writings

* Galileo exposes unsparingly the Aristotelian style of reasoning. The reader may take the following from him as a specimen of its quality. The object is to prove the immutability and incorruptibility of the heavens: and thus it is done:—

- I. Mutation is either generation or corruption.
- II. Generation and corruption only happen between contraries.
- III. The motions of contraries are contrary
- IV. The celestial motions are circular.
- V. Circular motions have no contraries.
 - a. Because there can be but three simple motions.
 1. To a centre.
 2. Round a centre.
 3. From a centre.
 - β. Of three things, one only can be contrary to one.
 - γ. But a motion to a centre is manifestly the contrary to a motion from a centre.
 - δ. Therefore a motion *round* a centre (*i. e.* a circular motion) remains without a contrary.
- VI. *Therefore* celestial motions have no contraries—*therefore* among celestial things there are no contraries—*therefore* the heavens are eternal, immutable, incorruptible, and so forth.

It is evident that all this string of nonsense depends on the excessive vagueness of the notions of generation, corruption, contrariety, &c., on which the changes are rung.—See GALILEO, *Systema Cosmicum*, Dial. i. p. 30.