

momentum (ῥοπή) to be a word of both applications. But heavy and light are, as it were, the *embers* or *sparks* of motion, and therefore proper to be treated of here."

The distinction just alluded to, between Power or Faculty of Action, and actual Operation or Energy, is one very frequently referred to by Aristotle; and though not by any means useless, may easily be so used as to lead to mere verbal refinements instead of substantial knowledge.

The Aristotelian distinction of Causes has not any very immediate bearing upon the parts of physics of which we have here mainly spoken; but it was so extensively accepted, and so long retained, that it may be proper to notice it.¹⁹ "One kind of Cause is the matter of which any thing is made, as bronze of a statue, and silver of a vial; another is the form and pattern, as the Cause of an octave is the ratio of two to one; again, there is the Cause which is the origin of the production, as the father of the child; and again, there is the End, or that for the sake of which any thing is done, as health is the cause of walking." These four kinds of Cause, the *material*, the *formal*, the *efficient*, and the *final*, were long leading points in all speculative inquiries; and our familiar forms of speech still retain traces of the influence of this division.

It is my object here to present to the reader in an intelligible shape, the principles and mode of reasoning of the Aristotelian philosophy, not its results. If this were not the case, it would be easy to excite a smile by insulating some of the passages which are most remote from modern notions. I will only mention, as specimens, two such passages, both very remarkable.

In the beginning of the book "On the Heavens," he proves²⁰ the world to be *perfect*, by reasoning of the following kind: "The bodies of which the world is composed are solids, and therefore have three dimensions: now three is the most perfect number; it is the first of numbers, for of *one* we do not speak as a number; of *two* we say *both*; but *three* is the first number of which we say *all*; moreover, it has a beginning, a middle, and an end."

The reader will still perceive the verbal foundations of opinions thus supported.

"The simple elements must have simple motions, and thus fire and air have their natural motions upwards, and water and earth have

¹⁹ Phys. ii. 3.

²⁰ De Cælo, i. 1.