

A NEW
ARISTOTLE READER

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PHYSICS*

BOOK I

CHAPTER I

In all disciplines in which there is systematic knowledge of things with principles, causes, or elements, it arises from a grasp of those: we think we have knowledge of a thing when we have found its primary causes and principles, and followed it back to its elements. Clearly, then, systematic knowledge of nature must start with an attempt to settle questions about principles. 184^a

The natural course is to proceed from what is clearer and more knowable to us, to what is more knowable and clear by nature; for the two are not the same. Hence we must start thus with things which are less clear by nature, but clearer to us, and move on to things which are by nature clearer and more knowable. The things which are in the first instance clear and plain to us are rather those which are compounded. It is only later, through an analysis of these, that we come to know elements and principles. 20

That is why we should proceed from the universal to the particular. It is the whole which is more knowable by perception, and the universal is a sort of whole: it embraces many things as parts. Words stand in a somewhat similar relationship to accounts. A word like 'circle' indicates a whole indiscriminately, whereas the definition of a circle divides it into particulars. And little children at first call all men father and all women mother, only later coming to discriminate each of them. 184^b

CHAPTER 2

There must be either one principle or more than one. If one, it must be either unchangeable, the view of Parmenides and Melissus, or subject 15

* Books I-II. *Translation*: W. Charlton (Clarendon Aristotle Series, 1970); *Text*: W. D. Ross (Oxford Classical Texts, 1950). Books III-IV. *Translation*: E. Hussey (Clarendon Aristotle Series, 1983); *Text*: W. D. Ross (Oxford Classical Texts, 1950). Book VIII. *Translation*: R. P. Hardie and R. K. Gaye, revised J. Barnes (Revised Oxford Aristotle, 1984); *Text*: W. D. Ross (Oxford Classical Texts, 1950).

to change, the view of the physicists, of whom some make air and others water the primary principle. If there are more principles than one, they must be either limited in number—that is, there are either two, three, four, or some such definite number of them—or unlimited. In the latter case, either they are all the same kind, and differ only in shape, as Democritus held, or they are different or even opposed in species. We are here raising the same question as those who ask how many things there are: they are really inquiring about the primary constituents of things, whether they are one or several, and if several whether they are limited or unlimited in number; so they too are inquiring into the number of principles and elements.

25 Now the question whether what is is one and unchangeable, does not belong to a discussion of nature. Just as the geometer has nothing left to say to the man who does away with the principles of geometry, he must refer him to a student of something else, or of what is common to all studies, so it is when we are inquiring into principles: there will be no principle left if what is is one thing only, and one in this way. A principle must be a principle of some thing or things. Discussing whether what is is one in this way, is like discussing any other thesis advanced for the sake of having a discussion, like that of Heraclitus, of the view that what is is a single man. Or like exposing a quibble, such as is latent in the arguments of both Melissus and Parmenides: for both reason invalidly from false premisses, but Melissus is the duller and more obvious: grant him one absurdity and he is able to infer the rest—no great achievement.

10 For ourselves, we may take as a basic assumption, clear from a survey of particular cases, that natural things are some or all of them subject to change. And we should not try to expose all errors, but only those reached by arguing from the relevant principles; just as it is the geometer's job to refute a quadrature by means of lunes, but not one like Antipho's. Nevertheless, since, though they are not writing about nature, the Monists happen to raise difficulties pertinent to it, we would do well, perhaps, to say a little about them; for the inquiry offers scope for philosophy.

20 The most appropriate way of all to begin is to point out that things are said to be in many ways, and then ask in what way they mean that all things are one. Do they mean that there is nothing but reality, or nothing but quantity or quality? And do they mean that everything is one single reality, as it might be one single man, or one single horse, or one single soul, or, if all its quality, then one single quality, like pale, or

of the like? These suggestions are all very different and untenable. There is to be reality and quality and quantity, then whether these are all from one another or not, there will be more things than one. And if everything is quality or quantity, then whether there is also reality or not we run into absurdity, if, indeed, impossibility can be so called. Nothing can exist separately except a reality; everything else is said of reality as underlying thing.

Melissus says that what is is unlimited. It follows that what is is one quantity. For the unlimited is unlimited in quantity, and no quality, quality, or affection can be unlimited, except by virtue of convenience, there being also certain quantitative things. For quantity comes into the account of the unlimited, but reality and quality do not. If then, there is reality and quantity as well, what is is twofold and not one; if there is just reality, so far from being unlimited, it will have no magnitude at all; if it had, there would be some quantity.

Again, as things are said to be, so they are said to be one, in many ways, so let us see in what way the universe is supposed to be one. A thing is called one if it is a continuum, or if it is indivisible, and we also call things one if one and the same account is given of what the being of each would be: so, for instance, wine and the grape.

10 Now if the universe is continuous, the one will be many; for continua are divisible without limit. (There is a difficulty about parts and wholes, though perhaps it is a problem on its own and not relevant to the present discussion: are the parts and the whole one thing or several, and in what way are they one or several, and if several, in what way are they several? And what about the parts which are not continuous? And is each indivisibly one with the whole, since they will be the same with themselves also?)

15 Is the universe one, then, in that it is indivisible? Then nothing will have any quantity or quality, and what is will be neither unlimited, as Melissus says, nor limited, as Parmenides prefers. For it is limits which are indivisible, not limited things.

20 If, however, all things are one in account, like raiment and apparel, they will find themselves in the position of Heraclitus. The being of good and the being of bad, of good and not good, will be the same, and the that good and not good, man and horse, will be the same, and the thesis under discussion will no longer be that all things are one, but that they are nothing at all. And the being of a certain quality and the being of a certain quantity will be the same.

25 Thinkers of the more recent past also were much agitated lest