TREATMENT OF APORIA "S" OF

ARISTOTLE'S METAPHYSICS:

Whether the first principles of things

exist

as universal or singular.

A Thesis submitted to the faculty of the College department of St. Meinrad Seminary in Partial fulfillment of the Requirements for the Bachelor of Arts.

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I

1

APORIA "S"

"WHETHER THE PRINCIPLES OF THINGS ARE UNIVERSAL OR SINGULAR."

A wise man is described as one who knows all, even difficult matters, with certitude and through their causes. A wise man seeks this knowledge for its own sake; he is one who can direct others and induce them to act.¹

All of these attributes of one who is described as wise come together in the man who knows the first and universal causes of things.² That this is true is shown by demonstrating that all of these attributes which are proper to a wise man, are also proper to that universal science which considers first and universal causes. This is done by the following:

First, the one who has universal knowledge has the attribute of knowing in a sense, all things. This is made clear by seeing that whoever knows universals knows in some way the things which are subordinate to universals, because he knows the universals in themselves. But all things are subordinate to those which are most universal. Therefore the one who knows the most universal things, knows in a sense all things.³

Second, the wise man is capable of knowing things that are difficult to know. But the things which are just about the most difficult for man to know are the universals.⁴ This is shown by the fact that those things which are farthest removed from the senses are most difficult for men to know; for all human knowledge originates with the senses, and sensory perception is

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common to all men. But those things which are most universal are farthest removed from sensible things, because the senses have to do with singular things. Thus it is clear that that science is most difficult which is most concerned with universals.⁵

Wisdom is certain. This attribute belongs to the science of the universals, for the more any sciences are prior by nature, the more certain they are. For sciences based on fewer principles are more certain than those which have additional principles.⁶ Particular sciences are subsequent in nature to universal sciences, because their subjects add something to the subjects of universal sciences. Hence that science which treats of being and the most universal things is the most certain.⁷

A wise man is one who can teach others. That science which speculates about the causes of things is more instructive.⁸ This is evident from the fact that those who teach assign causes of every single things, because scientific knowledge comes about through knowledge of the causes, and to teach is to cause this scientific knowledge in another. The science which considers the universals considers the first of all causes. Hence it is evidently the best fitted to teach.⁷

Concerning the attribute of wisdom which states that the wise man seeks this knowledge for its own sake, Aristotle says:

Understanding and scientific knowledge for their own sake are found in the highest degree in the science which has as its object what is most knowable. For one who desires scientific knowledge for itself will desire in the highest degree the science which is most truly science, and such a science has for its object what is most knowable. Now first principles and causes

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are most knowable. For it is by reason of these and from these that other things are known, and not these from things which are subordinate to them.¹⁰

The sixth and last attribute of the wise man is his superiority over others, hence his ability to induce them to act. This science which considers the universal causes is the highest and superior to subordinate sciences. He proves this by saying that that science which knows the reason why each single thing must be done is related to the other sciences as a chief or master science is to a subordinate one.¹¹ This science is concerned most with the reasons why each thing exists, that is to say, the final causes of all things. This is clear, as St. Thomas says:

...from the fact that that for the sake of which all particular things are done is the good of each thing, i.e., a particular good. But the end in any class of things is a good; and that which is the end of all things, i.e., of the universe itself, is the greatest good in the whole of nature. Now this belongs to the consideration of the science in question, and therefore it is the chief or architectonic science with reference to all the others.¹²

In view of these six attributes of a wise man, and seeing that these attributes come together in the man who knows the universal causes and principles, it is evident that this science is to be called wisdom, for this science must speculate about the first principles and causes.¹³

It is the aim of this science then to know the universal causes and principles of things, about which it also makes investigations and establishes the truth.

Aristotle sets out to discover then, the truth of this science. In Book III he states twenty-two problems and the reasons for them. These are problems which have not been satisfactorily solved by earlier thinkers. He does this because for "those who wish to investigate the truth, it is worth the while to ponder these difficulties well. For the subsequent study of truth is nothing else than the solution of earlier problems."14

In his questions. Aristotle sets out first of all to deal with the method which this particular science must use to investigate its subject, before he deals with the science itself. For since a man can not do two things at once, it is absurd for a man to try to acquire a science and at the same time to acquire the method proper to that science.¹⁵ Of the twenty-two questions which Aristotle asks in Book III. the first nine are on the method of investigation.¹⁶ In the remaining questions, (J to V), he considers the science itself.¹⁷ In regard to this science, since this science considers first principles as has been stated in Book I.¹⁸ he raises questions pertaining to the first principles. The Pythagoreans¹⁹ and the Platonists²⁰ considered the objects of mathematics as principles of things. Accordingly, he asks questions concerning the objects of mathematics.²¹ And since the Platonists considered the Forms as first principles of things,²² Aristotle inqures about the Forms. Concerning Plato's theory of the first principles, he asks first of all what the first principles of things really are:23 and secondly, what sort of things the first principles are.²⁴ and in regard to this he asks four questions:

1. Are the principles limited in number or kind?

(Aporia P)

- 2. Are the principles of corruptible and of incorruptible things the same or different? (Aporia Q)
 - 3. Do unity and being exist as entities in themselves? (Aporia R)
 - 4. Are the principles of things universal or singular?
 (Aporia S).²⁵

This last question is my immediate concern. I will first of all present the question more fully; In giving the historical background to the question, I will concentrate on Plato's theory of Forms as first principles. After exploring the Pros and cons in the dialectical treatment of the problem, I will present Aristotle's answer.

Further explanation of the Question:

"Are the principles of

things universal or singular?"

This is a question about the way principles exist. St. Thomas restates it:

The question is whether the principles of things are like certain universals or like some singular, i.e., whether those things which are held to be principles have the character of a principle in the sense of a universal intelligible nature, or according as each is something particular and singular.²⁰

HISTORY

This question is hard to understand unless we see the history of it and why Aristotle asked it. The pre-Socratic thinkers, such as Thales and Empedocles claimed that the substance and principles of things are particular entities such as fire, and earth, water, and air.

Most of those who first philosophized thought that only the things which belong to the class of matter are the principles of all things. For that of which all things are composed, from which they first come to be, and into which they are finally dissolved, while their substance remains although it is changed in its attributes -- this they call the elements and principles of existing things.²⁷

Thales says that this principle is water, for presumably he saw that the nutriment of all things is moist, that heat itself is generated from this, and animal life comes from this. "But that from which each thing comes to be is a principle of all things. He bases his opinion on this, then, and on the fact that the seeds of all things have a moist nature, whereas water is by nature the principle of moist things." 28

Anaximenes and Diogenes hold that air is prior to water, and is most fundamental of the simple bodies.²⁹

Empedocles holds that there are four simple bodies, since he adds to water, fire, and air a fourth -- earth. For he says that these always remain and only become many or few in number by being combined into a unity and separated out of unity.³⁰

These then, held the first principles to be substances and particular things. Actually they only considered the material principle.

The question and the reason for the question does not become clear however, until we see Plato's theory of Ideas. For Plate, agreeing at the very beginning with the opinions of Cratylus and Heraclitus, that all sensible things are always in a state of flux, and that there is no scientific knowledge of them, also accepted this doctrine in later years. However, Socrates ... sought for the universal in these matters and fixed his thought on definition, Plate accepted him because of this kind of investigation, and assumed that this consideration refers to other entities and not to sensible ones. 31

Hence, Plato, being Socrates' pupil, followed him, and adopted this method of seeking the universals of sensible substances for the purpose of investigating natural beings. Plato did so believing that in the case of natural beings, the universal in them could successfully be grasped and a definition be assigned to it, with no definition being given for any sensible thing, because since sensible things are always changing, no common intelligible structure can be assigned to any of them. For every definition must conform to each thing defined and must always do so, and thus required some kind of immutability. Plato made these common intelligible structures or universals entities in themselves, and separate from sensible things. He called them Ideas, or exemplars, inasmuch as sensible things have substantial being by participating in them. Hence **1**1 sensible things have being because of them and in conformity with them.32

And since the Forms are the causes of other things, he thought that the element of these things are the element of all existing things. Hence according to him, the great and the small are principles as matter, and the one as form.²²

Considering Plato's theory that the principles exist as

universal concepts, Aristotle asks whether they do exist this way, or whether they exist as singular, particular things.

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Dialectical Treatment

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In the latter part of Book III of the Metaphysics, Aristotle argues both sides of the question. He points out that if the first principles of things areuniversal, they will not be substances. He says this because a universal signifies a common term and thing, and not a particular thing which is a substance.³⁴

If someone would assert that a universal is a particular thing, some rather peculiar logical conclusions would follow. As for example, we can apply three common predicates or universal concepts to Socrates: He is Socrates, a supposite; he is also a man; he is also an animal. If someone would hold that a universal is a substance, he will be forced to say that Socrates then, is three particular things, a conclusion which is clearly false.

If then, the first principles of things were universal, those two consequences will follow, i.e., principles will not be substances, and if the universals are held to be substances, Socrates will be three particular things.³⁵

On the other hand, if the principles are not universals, but singulars it would seem that we could not have scientific knowledge of them because the human intellect's knowledge is attained only through universal intellectual concepts. If we would not have certain knowledge of the first principles, we could not have a science of things because we do not really

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know a thing until we know its causes and principles. 36

Rejection of the theory that Principles exist as Universals

The term universal involves two features. First of all, it can be taken to signify the substances of things inasmuch as they are predicated quidditatively. Second, a universal can be taken insofar as it is a consequence of this, and insofar as the nature predicated of a thing falls under the aspect of universality. For instance the nature predicated of animal or man is considered a one-in-many. And in this sense, the Platonists claimed that animal and man in their universal aspect constitute substances.³⁷

This is what Aristotle sets out to disprove and reject in Book VII.³⁸ This rejection of the universal as a substance and a principle is the main concern of Aporiae J & K, and I will not deal with it here. Aristotle's idea of how the first principles exist

Aristotle treats matter, form, privation, and a moving cause as the first principles in Book VIII, and summarizes and completes his treatment in Book XII.³⁹ In sensible substances, matter must be posited as a substance and a principle.

Now it is evident that matter is substance; for in every process of change between contraries there is something thich underlies these changes. For example, in change of place, there is something which is now here and afterwards somewhere else; and in e change of size, that which is now of such a size and afterwards small or greater; and in change of quality, that which is now healthy and afterwards diseased. And similarly in change of substance there is something which is now in the process of generation and afterwards in the process of corruption, and which is now a subject and this particular thing, and afterwards a subject of privation.⁴⁰

So matter is the underlying subject common to all things. Aristotle defines it in another place as "That which is not any particular thing actually but potentially." ⁴¹

Matter explains what is common to all things. It remains to be seen what it is that constitutes the principle of sensible things in the sense of actuality. Aristotle proves by induction that there is this second intrinsic principle, which is form.

Before he launches into his induction, Aristotle points out Democritus as one who thought that matter is the common principle of all things, but that this common matter is the specifying principle or the form also. Democritus seems to have held that the material principles of different things are indivisible bodies, which, being of the same nature, are similar to each other; these, he thought, constitute a diversity of things by their difference in position, shape, and arrangement.⁴²

Aristotle shows that this theory is unsatisfactory, because there seem to be many other differences. He says:

However, there seem to be many differences inasmuch as some things are said to be by reason of the way in which their material parts are combined; for example, some things are combined by mixture, as honeywater; others by a binding, as the binding around a head; others by birdlime, as a book; others by a nail, as a chest; and others in several of these ways.Others differ by position, as a threshold and a lintel, for these differ in a sense according to their position; others differ in point of time, as dinner and breakfast; others with respect to place, as the air currents; others by reason of sensible properties, as hardness and softness, density and rarity, dryness and moistness. And some things differ by some of these differences and others by all taken together.⁴³

Then he shows how these differences are related to those things whose differences they are:

...it is evident that being is also used in the same number of ways; for a threshold is such because it is placed in this particular position, and to be a threshold means to be placed in such and such a position; and to be ice means to be congealed in such and such a way.

So because these differences are constitutive of the the things we have mentioned above, it is evident that the being of realities is diversified according to these differences, for a difference completes a definition which signifies the being of a thing. And by each of the differences mentioned the being of things or a certain type is differentiated.⁴⁵ Aristotle concludes that, since the very being of things somehow consists in their differences, and has to be known in this way, it will be worth our while to grasp the classes of differences by reducing the secondary differences of a class to the primary differences, because common and proper differences of this kind will be the principles of being of a whole class. He says:

We must consider the classes of differences, for these will be the principles of being of things, as differences in degree, or in density or rarity, and others such as these; for all are instances of excess and defect. Indeed, if anything differs either in figure or in smoothness and roughness, these are reducible to differences in straightness and curvature.⁴⁶

In attempting to see how these differences are related to the substances of things, Aristotle shows that we must try to discover in these differences the formal cause of the being of each thing, if it is true that it is in this way that substance in a formal sense, or the whatness of a thing is the cause of being.⁴⁷ He shows that the form is the specifying principle by pointing out that:

Among those who give definitions, those who state what a house is by saying that it is stones, bricks and timbers, are speaking of a potential house; for these are its matter. But those who say that it is a shelter for protecting goods and bodies, or by adding some other such property, speak of its actuality. And those who speak of both of these together speak of the third kind of substance, which is the thing composed of these. For the intelligible structure which is expressed by means of differences seems to be that of the form or actuality of a thing, but that which is expressed by a thing's intrinsic parts is rather that of its matter. From what has been said, then, it is evident what sensible substance is and how it exists; for in one sense it has the character of form (because it is actuality), and in a third sense it is the thing composed of these.⁴⁸

So we see from the foregoing that the principle of things are matter and form. Matter is the common element, and form is the specifying principle.

A third intrinsic first principle of things is privation or lack. Aristotle explains this best in his first book of the Ehysics. He points out that the early thinkers agree in making the contraries principles. Parmenides, for example, treats hot and cold as principles under the names of fire and earth. Others used the rare and the dense.

It is plain that they [the early thinkers] all in one way or another identify the contraries with the principles. And with good reason. For first principles must not be derived from one another nor from anything else, while everything has to be derived from them. But these conditions are fulfilled by the primary contraries, which are not derived from anything else because they are primary, nor from each other because they are contraries.

But we must see how this can be arrived at as a reasoned result as well as in the way just indicated.

Our first presupposition must be that in nature nothing acts on, or is acted on by, any other thing at random, nor may anything come from anything else unless we mean that it does so in virtue of a concomitant attribute. For how could 'white' come from 'musical', unless 'musical' happened to be an attribute of the not-white or of the black? No, white comes from'not-white' - and not from any 'not-white', but from black or some intermédiate colour.

... the same holds of other things also; even things which are not simple but complex follow the same principles.... What is in tune must come from what is not in tune, and vice versa; the untunedness, but into. It does not matter whether we take attunement order, or composition for illustration; the principle is obviously the same in all, and in fact applies equally to the production of a house, a statue, or any other complex. A house comes from certain things in a certain state of separation instead of conjunction, a statue from shapelessness. If then this is true, everything that comes to be or passes away, comes fromy or passes into, its contrary or an intermediate state. But the intermediates are derived from the contraries - colors for instance, from black and white. Everything, therefore, that comes to be by a natural process is either a contrary or a product of contraries.⁴⁹

Aristotle thoroughly explains matter and form as first principles in the Metaphysics, but he does not give a thorough treatment of privation. He does treat it knough, and in Book XII, he sums up the intrinsic first principles:

The causes or principles of things, then are three. Two of these are the pair of contraries, of which one is the formal determinant or specifying principle and the other the privation, and the third, matter.⁵⁰

Besides these intrinsic principles, there is an external cause or principle, which is motion or the moving gause. Aristotle defines motion itself as the actualization as such of what is potential.⁵¹ Motion occurs when something is in the very act of building, or learning, or walking, or the like, and neither before nor after. That motion is this is evident:

For each thing is capable of being at one time actual and at another not, for example, the buildable as buildable; and the actualization of the buildable as buildable is the process of building. For the actuality is either the process of building or this particular house. But when the house exp exists, it will no longer be buildable; but what is being built is what is buildable. Therefore the process of building is a kind of motion. The same reasoning also applies to other motions.⁵²

That a mover or the cause of motion is necessary is evident from the definition. For those things which are potentiality only, or which come entirely under privation, or belongs to some confused mass, cannot be moved so as to be brought to actuality unless there is some moving cause which is existing actually.⁵³ This is a principle because that which acts as producing movement or rest is a principle and a substance.⁵⁴ This mover is the first of the four causes because it is that one which makes the form and privation to exist in matter.⁵⁵ Aristotle proves in chapter six of the twelfth book of the Metaphysics that there must be an eternal unmoved mover,⁵⁶ and upon this all things depend.⁵⁷

These then are the first principles of things: matter, form, and privation as intrinsic principles, and an extrinsic principle, the mover. These are the same for all proportionally because each thing has matter, form, privation, and a moving cause.⁵⁸ My question is, how do these exist. Now the answer to our original question can be seen in the definition of these first principles. Let us take them in order.

Matter as pure potency can not exist by itself because it is potential and not actual.⁵⁹ Indeed, Aristotle defines matter as that which is not a particular thing actually but potentially.⁶⁰ If matter cannot exist as pure potency, how does it exist? Aristotle says: "All sensible substances have matter."⁶¹ And again, he says that in every process of change, there is "something which underlies these changes; for example, in change of place, there is something which is now here and afterwards somewhere else; and in change of quality, that which is now healthy, and afterwards diseased."⁶⁶ The point to be made is that matter exists in some particular thing. Matter is something which underlies changes. It does not exist as a universal intelligible nature, but as a particular thing, or it does not exist at all.

There is no universal form apart from composite substances either. If we say that the formal principle of things does exist apart from things and by itself, we run into the same problems raised by Plato's theory of Forms.

For if animal itself is a particular thing which exists of itself, and is separate, and the same is true of two-focted, as the Platonists held, then it is reasonable to ask why man is not these two things connected together, so that particular men are such only by participating in man, and not by participating in one thing but two, animal and twofooted. And according to this, man will not be one thing but two, namely animal and man.⁶³ The formal cause and principle of things begin to be when the thing of which it is the form begins to be. "For it is when a man becomes healthy that health also exists; and the shape of the bronze sphere comes to be at the same time as the bronze sphere."⁶⁴

Privation, as a third intrinsic principle, is a lack, so it does not exist at all.

The moving cause, as a principle, must exist as a particular actual whole, for the mover is an agent, and it must exist before it can become an agent to anything. In chapter six of the twelfth book of the Metaphysics, Aristotle proves that eternal motion requires an eternal mover. This eternal mover moves intermediate movers which are moved movers,⁶⁵ so that although there is one first mover, each thing has,⁴different mover "for example, health, sickness, and body, and the moving cause is the art of medicine; form, a certain kind of disorder, and bricks, and the moving cause is the art of building."⁶⁶

So these principles of things are not universals, for the principle of a singular thing is a single thing.

For while man taken universally is a principle of man, there is no universal man, but Peleus is the cause of Achilles, and your father is the cause of you; and band a taken absolutely or particularly are the cause of the syllable ba.

ST. Thomas explains this further by saying that the universals themselves do not exist as the Platonists claimed, because the principles of each singular thing can only be a singular thing, for the principle of an effect taken universally is a universal, as man of man. But since there is no subsisting universal man, there will be no universal principle of universal man, but only this particular man will be the principle of this particular man.⁶⁸

So we see that principles of things exist as singular, and not as universals as Plato thought. This seems to present a problem however. that:

...while every science must be about universals and about such and such a universal, a substance is not a universal but is rather a particular and separate ble thing, Hence, if there is a science of principles, how are we to understand substance to be a principle?⁶⁹

"The truth of the matter," says St. Thomas, "is that there is nothing existing in reality except singulars, and that everything else exists only in consideration of the intellect, which abstracts commonness from particulars."⁷⁰ The first principles of things are singular as has been pointed our, but we gain scientific knowledge of things by considering universally the natures of things which subsist of themselves. We do not however, make these common attributes principles in a Platonic sense.

Accordingly, genera and species, which are called second substances, are put in the category of substance; and of these there is scientific knowledge. And certain things which exist of themselves are principles; and these, because they are immaterial pertain to intelligible knowledge, even though they surpass the comprehension of our intellect.7¹ So we see how the principles of things are singular, and how we can know these. This is the answer to the question: "Whether the first principles of things exist as universal or as singular."

CONCLUSION

(Summary)

Plato, Aristotle's teacher, observed that individual substances, as individuals, can not be defined. They are constantly in a state of flux. On the other hand, a philosopher wishes to gain certain knowledge of reality through knowledge of the first principles. If these first principles of reality exist as singulars, which are not knowable as singulars, whom can we have knowledge of being as substance? Plato attempted to answer this problem by claiming that the first principles exist as universals, as for example, the universal concept "man" or "animal" actually existed according to him, and is the cause and principle of this particular man. This principle and cause is then knowable, and by it, we can have certain knowledge of reality.

Aristotle saw the problems of such a theory. If the universal exists, instead of solving a problem, this answer increased the problem by introducing other principles. As though, he says, one who wishes to count things thinks that this cannot be done when they are few, but believes that he can count them after he has increased their number. Also, if the universals are principles they will not be substances, ôr if someone says that they are substances, they will be forced to conclude that Socrates is three things; for Socrates is supposite; he is also a man; and animal is predicated of him. If someone would hold that a universal is a substance, he will be forced to say that Socrates is these three things.

On the other hand, if principles are not universals, but singulars, how are we to have scientific knowledge of things?

Aristotle sets out to find the truth in this matter. He shows that the universals neither exist nor are they separate entities, nor are they principles, but that the principles of things are singular. He goes on to show, however, that we can know them. We know them immaterially and by universal concepts. This is what I have attempted to bring out in this thesis.

FOOTNOTES

FOOTNOTES
Aristotle, <u>Metaphysics</u> . Translated by John P. Rowan. Chicago: Henry Regnery Company, 1961, Bk. I (982a5-982a20). (Hereafter referred to as <u>Meta</u> .).
² St. Thomas Aquinas, <u>Commentary on the Metaphysics of</u> <u>Aristotle</u> . Translated by John P. Rowan. Chicago: Henry Reg- nery Company, 1961, 44. (Hereafter referred to as <u>In Meta.</u> , 44, etc.)
³ <u>Meta</u> ., Bk. I, (982a21)
⁴ <u>Ibid</u> ., (982a24)
5 <u>In Meta</u> ., 45.
6 <u>Metá</u> ., Bk. I,(982a25)
7 <u>In Meta.</u> , 47.
8 <u>Meta</u> ., Bk. I, (982a29)
9 <u>In Meta.</u> , 48.
10 _{Meta.} , Bk. I, (982a30-982b3)
ll <u>Ibid</u> ., (982b5)
12 <u>In Meta</u> ., 50.
13 _{Meta.} , Bk. I, (982b11)
¹⁴ <u>Ibid</u> ., Bk. III, (995a25-995a30)
15 <u>Ibid</u> ., (995a13)
¹⁶ <u>Ibid</u> ., (995b4-995b27)
17 <u>Ibid</u> ., (995b27-996a17)
18 _{Meta} ., (Bk. I, (983a3)
19 <u>Ibid</u> ., (986a13-986b10)
²⁰ <u>In Meta., 1</u> 61.
²¹ <u>Meta</u> ., Bk. III, (996a15-996a17)
²² <u>Ibid</u> ., Bk. I, (987b20)
²³ <u>Ibid</u> , Bk. III, (995b27-995b37)

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²⁴Ibid., (996al-996al0) ²⁵ibid., (996a1-996a5) ²⁶In <u>Meta</u>., 364. ²⁷Meta., Bk. I, (983b5-983bl0) ²⁸Ibid., Bk. I, (983b19+983b28) ²⁹Ibid., (984a5) ³⁰Ibid., (984a8-984a10) ³¹Ibid., (987a31-987b7) 32_{In Meta., 153.} 33. Meta., Bk. I, (987b20) ³⁴<u>Meta.</u>, Bk. III, (100al-1003a15) ³⁵<u>Ibid</u>., (1003a5-1003a15) 36_{Ibid}., (1003a14) 37<u>In Meta.</u>, 1570. ³⁸Meta., Bk. VII, (1038b5) $^{39}\!_{\rm Matter,}$ form, privation a mover as first principles are handled more properly by Aporiae Q and R. 40 Meta., Bk. VIII, (1042a32-1042b5) 41 Ibid., (1042a27) 42 Ib<u>id</u>., (1042b10-1042b15) 43<u>Ibid</u>., (1042b15-1042b25) 44_{Ibid}., (1042b25-1042b30) 45_{In Meta}., 1694. 46_{Meta.}, Bk. VIII, (1042b30-1042b35) 47 Aristotle had proven in Chapter 17 of Bk. VIII that essence has the character of a principle and a cause. Meta., (1041a6 - 1041a33)48_{Meta., Bk., VIII} (1043a15-1043a28)

49 Physics, Bk. I, Chapter 5. ⁵⁰Meta., Bk., XII (1096b32) ⁵¹Ibid., Bk. XI (1065b15) 52_{Ibid}., (1066a1-1066a5) 53<u>In Meta</u>., 2503. ⁵⁴Meta., B. XII (1070b25) ⁵⁵Ibid., (1070b35) ⁵⁶<u>Ibid</u>., (1071b22-1072a26) 57_{Ibid.}, (1072b14) 581bid., (1070a32) 59<u>In Meta.</u>, 2177. 60_{Meta}., (1042a27) 61_{Ibid}., (1042a26) 62_{Ibid}., (1042a35-1042b3) 63_{In Meta}., 1757. ⁶⁴Meta., Bk. XII (1070a25) 65<u>Ibid</u>., (1072a26) 66_{Ibid}., (1070a25-1070a30) 67<u>Ibid</u>., (1071a20-1071a24) 68_{In Meta.}, 2482 69_{Meta.}, (1060b20) 70<u>In Meta</u>., 2174. ⁷¹Ibid., 2189.

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