

# Scriptum super libros Posteriorum

by Walter Burleigh

translated by John Longeway, from

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## Chapter 7

[I.6 75a28-37] “Now since it is necessary” (*Quoniam autem est necesse etc.*) The seventh conclusion in this book is that the first term is in the middle term, and the middle in the third term, because of itself. This conclusion is proven using the sixth conclusion thus: A demonstration is from what inheres per se, therefore the major premise of a demonstration receives in its definition the second of the extremes <that is, the minor, or third term>. ☒ And consequently the first is in the middle, and the middle is in the third because of itself. For the first is either the cause of the middle or vice versa. And in the same way the middle is either the cause of the third or vice versa.

Note that something is said to be in another because of itself when what precedes another is the cause of the other in such a way that it is not a partial (*diminuta*) cause, nor has in itself a condition which is not a cause. For instance, triangle is the cause of this that there is the having of three angles, etc. But plane figure ☒ is a partial cause in respect of this passion, so it is not its precise cause.

[I.7 75a37-b20] The eighth conclusion of this book is that it is not possible to demonstrate by descending from one genus to another. So it is to be understood that the principles of one science do not conclude anything in another science. And he proves this conclusion thus: In (41vb) a demonstration it is necessary for the middle and extremes to be of the same genus. But the subject in demonstration of which the passion must be concluded is of one genus and not another, and the consequent cannot be the middle in a demonstration from the consideration of one science, and the extremes, or one of the extremes, from the consideration of another. Consequently demonstrating by descending from one genus to another genus does not occur. But when the middle <is of one genus> and the extreme of another genus, since that which is of one genus is not proven of what is of another genus except accidentally, it follows that either the conclusion of the demonstration or one of its premisses is true accidentally, and so the demonstration is not from what inheres per se.

To make this conclusion clear Aristotle distinguishes those <things> that enter into a demonstration. [I.7 75a 38-b1] There are three <things> that enter into a

demonstration, namely the subject, passion and axiom (*dignitas*). ☒ And I hold that different sciences might well have the same axioms, for instance, in geometry and arithmetic this is a common axiom occurring in each: If equals be removed from equals the remainders are equal. But different sciences do not have the same genus or the same passion of the subject genus unless one is subalternate to the other, so that it is a true subalternate science, and then they can, in a way, have the same subject. And since no descent from genus to genus occurs, in every case there will be no demonstrating that of contraries there is the same discipline; nor that by reducing a cubical number to a cubical number there arises a bicubical number; nor that a straight line is the most beautiful of lines, and contrary to the circle, for this is not in the line as such, but is in it by reason of something common and through the form of line.

[I.8 75b21-25] The ninth conclusion is that demonstration is from what is always (*perpetuis*). This is proven thus: Demonstration is from what is universal, but universals are always, therefore demonstration is from what is always.

[I.8 75b26-32] The tenth conclusion is that demonstration is from indestructibles. This conclusion is proven using the ninth conclusion, thus: Demonstration is from what is always, but what is always is incorruptible. And from these it follows that every definition is of incorruptibles, for definition is either a principle of demonstration or the conclusion of a demonstration or the whole demonstration itself, differing in arrangement. Then the genus of definition includes demonstration, but every demonstration is of indestructibles. Therefore every definition is of indestructibles.

[I.8 75b33-36] And since it has been said that does not occur except from what is always there is a doubt concerning what is for the most part the case, how do they make a demonstration, for instance, concerning the obscuration of the moon. For can one demonstrate an eclipse of the moon when the moon is not always eclipsed? Aristotle resolves this doubt by saying that since those things that are for the most part the case are always the case insofar as they agree with demonstration. But this ought not to be understood in such a way that from propositions that are for the most part true there must arise those which are always true, and then from these there must arise demonstrations. For example, this happens, that the moon is eclipsed. And so the moon is obscured, and the Earth is placed between the sun and the moon, and from these there can arise demonstrations in this way: Whenever the Moon is obscured it is eclipsed, but whenever the Earth lies between the Moon and the Sun it is obscured; therefore etc. And this conclusion is necessary since this moon is eclipsed, which is, thus, the contingent part. ☒

## Chapter 8

[I.9 75b37-76a13] “Now since it is evident that etc.” (*Quoniam autem manifestum etc.*) This conclusion is the eleventh, that not everything that is syllogized ☒ from true and indemonstrable propositions is known or demonstrated. This conclusion is proven thus. In demonstration it is necessary for the first to be said of the middle and the middle

of the third because of itself. But not in every syllogism from true and indemonstrable propositions is the first said of the middle and the middle of the third because of itself; therefore not every such syllogism is a demonstration, and consequently not everything that is syllogized from true and indemonstrable <propositions> is demonstrated or known.

As to the assumption, that is, that something arises from true, indemonstrable and immediate propositions in which the first is not said of the middle nor the middle of the third because of itself, it is explained from the fact that the argument of Briso by which he wants to square the circle is from true, indemonstrable and immediate propositions and is not a demonstration. His argument is formed thus: Where greater and less <than a given quantity> are found, there an equal is to be found, but a square greater, and one less than a circle are found, therefore etc. ☒ That argument is not a demonstration, for the elements greater and less go beyond (42ra) the circle and the square. Hence the middle is in it prior to being in that concerning which the demonstration arises, and therefore it is not in it according to itself, and without this there is no demonstration.

Then, to exclude a certain doubt, the Philosopher says that if the middle does not arise in the same genus as the conclusion of the demonstration, so that it happens that the conclusion is not at all demonstrated through the middle, then there is knowing by an inferior knowledge, since knowing *propter quid* is superior knowledge. For there is no knowledge that is knowing *propter quid* to which the middle pertains.

[I.9 76a13-15] The twelfth conclusion is that every demonstration is from principles made appropriate to the conclusion. And this follows from the eleventh conclusion of this book. For if it does not suffice to demonstration that it be from true and immediate and indemonstrable propositions, but is required that the first be in the middle and the middle in the third because of itself, then it is necessary that demonstration be from principles appropriate to the conclusion.

[I.9 76a16-36] The thirteenth conclusion is that it belongs to no science to demonstrate its own proper principles. This conclusion is proved from the present conclusion thus: Demonstration has being from proper principles, but proper principles do not have other proper principles prior to them; therefore it belongs to no science to prove its own proper principles.

But even though proper principles have been proved in this particular science, still proving them from common <principles> is <more a matter of> making them plain, and he is more a knower and understander who has knowledge from the more principal causes. Hence a superior science is greater than an inferior science.

[I.9 76a37-b11] The fourteenth conclusion of this book is that it is necessary, if common principles are to agree with a demonstration in a special science, that they be appropriated to the object of the science. This conclusion follows from the preceding conclusion, for if demonstration arises from proper principles, then it is necessary for common ☒ principles, when they enter into the demonstration, to be made proper. For example, there is one principle in the conclusion of geometry <and> arithmetic to the

effect that if equals be taken from equals what remains is equal. And arithmetic uses this principle and makes it appropriate to its genus, about which it considers. So that if from equals, that is, equal numbers, equal numbers be taken, the remaining numbers are equal.

[I.10 76a37-b39] After this, the philosopher distinguishes ☒ among those things that are alone properties (*proprietates*) in demonstrations. Of this sort are axioms, postulates (*petitiones*) <and> suppositions (*suppositiones*). And these can all easily be accepted. Everything that is in a demonstration is either a principle or is principiated. If it is principiated it is a passion. If it is a principle it is proper or common. If it is common, it is an axiom. If it is proper it is complex or incomplex. If it is incomplex it is a subject. If it is complex it is either demonstrable or indemonstrable. If it is demonstrable it is either probable to the learner, and thus it is a supposition not without qualification, but in a certain manner, or it is contrary to the opinion of the learner, and thus it is a postulate (*quaestio*). But if it is an indemonstrable principle it is a position, which is divided into supposition without qualification and definition. For if it receives being or non-being, thus it is a supposition, but if it receives neither being nor non-being, thus it is definition.

## Chapter 9

[I.11 77a10-21] “Now to happen etc.” (*Contingere autem etc.*) The fifteenth conclusion is that no demonstration receives affirmation and denial of something of itself, unless the conclusion is such that it cannot be shown except through affirmation of something of itself. This conclusion is proven only if, in an argument (*sylogismo*) to the impossible, the conclusion cannot be shown otherwise than through affirmation and denial of something of itself. Therefore an affirmation and denial of something of itself is never found unless the conclusion is such that it cannot be shown otherwise than through affirmation and denial of something of itself. Now how it is that affirmation and denial of something of itself is received into an argument to the impossible is clear, for if Callias is a non-animal it is to be argued thus: Callias is an animal, therefore Callias is not a non-animal and <it was assumed that> ☒ Callias is a non-animal. It follows then that Callias is not an animal, therefore Callias is not Callias. This conclusion that Callias is not Callias is not concluded except through affirmation and denial of something of itself, and nonetheless, from the falsity of this conclusion is concluded the falsity of the other premise. ☒

[I.11 77a22-35] The sixteenth conclusion is that demonstration leading to the impossible receives this principle, that of everything the affirmation or the denial <of a predicate> is true <but not both>, but made appropriate to the genus of the subject. That an argument (*sylogismus*) leading to the impossible receives this principle is clear from the *Prior Analytics*, and that what is according to the principle <is received> in the same way, namely, <as it is> made appropriate to the genus of the subject, is clear from the preceding conclusion of the book at hand.

## Chapter 10

[I.12 77a36-b15] (42rb) “Now if the same etc.” (*Si autem idem etc.*) This is the seventeenth conclusion of this book: Every conclusion that a demonstrator seeks is from proper <premisses>, but what is a principle in one demonstration is the conclusion ☒ in another. And then it is argued thus: Every proposition from which something is demonstrated is from proper <principles>, but every conclusion a demonstrator seeks is a proposition from which something is demonstrated; therefore every conclusion that a demonstrator seeks is from proper <principles>. And from this conclusion a corollary follows, namely, that different sciences do not coincide in their conclusions, nor does any special artisan have it as his job to enumerate the conclusions of another science. And thus ☒ every science has its own proper conclusions, since the question and the answer belong to the same science, and therefore, just as a science has its own proper questions so it has its own proper answers. And since disputations arise from question and answer, just as every science has its proper questions and answers, so every science has its own proper disputations. For instance, the geometer disputes as a geometer when geometry disputes those things pertaining to geometry, it is clear that he proceeds well by disputing <thus>. But if he does not dispute thus, although he disputes in geometry, but not about geometry, the disputation does not proceed, and it is not suitable. Hence it is not to be disputed in geometry about what is not geometrical.