CHAPTER XXX.

Of Fallacies.

Section 827. After examining the conditions on which correct thoughts depend, it is expedient to classify some of the most familiar forms of error. It is by the treatment of the Fallacies that logic chiefly vindicates its claim to be considered a practical rather than a speculative science. To explain and give a name to fallacies is like setting up so many sign-posts on the various turns which it is possible to take off the road of truth.

Section 828. By a fallacy is meant a piece of reasoning which appears to establish a conclusion without really doing so. The term applies both to the legitimate deduction of a conclusion from false premisses and to the illegitimate deduction of a conclusion from any premisses. There are errors incidental to conception and judgement, which might well be brought under the name; but the fallacies with which we shall concern ourselves are confined to errors connected with inference.

Section 829. When any inference leads to a false conclusion, the error may have arisen either in the thought itself or in the signs by which the thought is conveyed. The main sources of fallacy then are confined to two--

(1) thought,

(2) language.

Section 830. This is the basis of Aristotle's division of fallacies, which has not yet been superseded. Fallacies, according to him, are either in the language or outside of it. Outside of language there is no source of error but thought. For things themselves do not deceive us, but error arises owing to a misinterpretation of things by the mind. Thought, however, may err either in its form or in its matter. The former is the case where there is some violation of the laws of thought; the latter whenever thought disagrees with its object. Hence we arrive at the important distinction between Formal and Material fallacies, both of which, however, fall under the same negative head of fallacies other than those of language.

| In the language
| (in the signs of thought)
|

Fallacy -| |--In the Form.
|--Outside the language -|
| (in the thought itself) |
|
|--in the Matter.

Section 831. There are then three heads to which fallacies may be referred-namely, Formal Fallacies, Fallacies of Language, which are commonly known as Fallacies of Ambiguity, and, lastly, Material Fallacies.

Section 832. Aristotle himself only goes so far as the first step in the division of fallacies, being content to class them according as they are in the language or outside of it. After that he proceeds at once to enumerate the infimæ species under each of the two main heads. We shall presently imitate this procedure for reasons of expediency. For the whole phraseology of the subject is derived from Aristotle's treatise on Sophistical Refutations, and we must either keep to his method or break away from tradition altogether. Sufficient confusion has already arisen from retaining Aristotle's language while neglecting his meaning.

Section 833. Modern writers on logic do not approach fallacies from the same point of view as Aristotle. Their object is to discover the most fertile sources of error in solitary reasoning; his was to enumerate the various tricks of refutation which could be employed by a sophist in controversy. Aristotle's classification is an appendix to the Art of Dialectic.

Section 834. Another cause of confusion in this part of logic is the identification of Aristotle's two-fold division of fallacies, commonly known under the titles of In dictione and Extra diotionem, with the division into Logical and Material, which is based on quite a different principle.

Section 835. Aristotle's division perhaps allows an undue importance to language, in making that the principle of division, and so throwing formal and material fallacies under a common head. Accordingly another classification has been adopted, which concentrates attention from the first upon the process of thought, which ought certainly to be of primary importance in the eyes of the logician. This classification is as follows.

Section 836. Whenever in the course of our reasoning we are involved in error, either the conclusion follows from the premisses or it does not. If it does not, the fault must lie in the process of reasoning,

and we have then what is called a Logical Fallacy. If, on the other hand, the conclusion does follow from the premisses, the fault must lie in the premisses themselves, and we then have what is called a Material Fallacy. Sometimes, however, the conclusion will appear to follow from the premisses until the meaning of the terms is examined, when it will be found that the appearance is deceptive owing to some ambiguity in the language. Such fallacies as these are, strictly speaking, non-logical, since the meaning of words is extraneous to the science which deals with thought. But they are called Semi-logical. Thus we arrive by a different road at the same three heads as before, namely, (1) Formal or Purely Logical Fallacies, (2) Semi-logical Fallacies or Fallacies of Ambiguity, (3) Material Fallacies.

Section 837. For the sake of distinctness we will place the two divisions side by side, before we proceed to enumerate the infimae species.

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        |--In the language
        | (Fallacy of Ambiguity)
 Fallacy-|
        |                    |--In the Form.
        |--Outside the language -|
                             |
                             |--In the Matter.

                  |--Formal or purely logical.
        |--Logical -|
 Fallacy-|          |--Semi-logical
        |           (Fallacy of Ambiguity).
        |--Material
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838. Of one of these three heads, namely, formal fallacies, it is not necessary to say much, as they have been amply treated of in the preceding pages. A formal fallacy arises from the breach of any of the general rules of syllogism. Consequently it would be a formal fallacy to present as a syllogism anything which had more or less than two premisses. Under the latter variety comes what is called 'a woman's reason,' which asserts upon its own evidence something which requires to be proved. Schoolboys also have been known to resort to this form of argument--'You're a fool.' 'Why?' 'Because you are.' When the conclusion thus merely reasserts one of the premisses, the other must be either absent or irrelevant. If, on the other hand, there are more than two premisses, either there is more than one syllogism or the superfluous premiss is no premiss at all, but a proposition irrelevant to the conclusion.

839. The remaining rules of the syllogism are more able to be broken than the first; so that the following scheme presents the varieties of formal fallacy which are commonly enumerated--

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                |--Four Terms.
 Formal Fallacy-|--Undistributed Middle.
                |--Illicit Process.
                |--Negative Premisses and Conclusion.
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Section 840. The Fallacy of Four Terms is a violation of the second of the general rules of syllogism (Section 582). Here is a palpable instance of it--

All men who write books are authors.
All educated men could write books.
.'. All educated men are authors.

Here the middle term is altered in the minor premiss to the destruction of the argument. The difference between the actual writing of books and the power to write them is precisely the difference between one who is an author and one who is not.

Section 841. Since a syllogism consists of three terms, each of which is used twice over, it would be possible to have an apparent syllogism with as many as six terms in it. The true name for the fallacy therefore is the Fallacy of More than Three Terms. But it is rare to find an attempted syllogism which has more than four terms in it, just as we are seldom tendered a line as an hexameter, which has more than seven feet.

Section 842. The Fallacies of Undistributed Middle and Illicit Process have been treated of under SectionSection 585, 586. The heading 'Negative Premisses and Conclusion' covers violations of the three general rules of syllogism relating to negative premisses (SectionSection 590-593). Here is an instance of the particular form of the fallacy which consists in the attempt to extract an affirmative conclusion out of two negative premisses--

All salmon are fish, for neither salmon nor fish belong to the class mammalia.

The accident of a conclusion being true often helps to conceal the fact that it is illegitimately arrived at. The formal fallacies which have just been enumerated find no place in Aristotle's division. The reason is plain. His object was to enumerate the various modes in which a sophist might snatch an apparent victory, whereas by openly

violating any of the laws of syllogism a disputant would be simply courting defeat.

Section 843. We now revert to Aristotle's classification of fallacies, or rather of Modes of Refutation. We will take the species he enumerates in their order, and notice how modern usage has departed from the original meaning of the terms. Let it be borne in mind that, when the deception was not in the language, Aristotle did not trouble himself to determine whether it lay in the matter or in the form of thought.

Section 844. The following scheme presents the Aristotelian classification to the eye at a glance:--

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                |                |--Equivocation.
                |                |--Amphiboly.
                |--In the language -|--Composition.
                |                |--Division.
                |                |--Accent.
                |                |--Figure of Speech.
Modes of    -|
Refutation. |                          |--Accident.
                |                  |--A dicto secundum quid.
                |                  |--Ignoratio Elenchi.
                |--Outside the language -|--Consequent.
                |                  |--Petitio Principii.
                |                  |--Non causa pro causa.
                |                  |--Many Questions.
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[Footnote: for "In the language": The Greek is [Greek: para ten lexin], the exact meaning of which is; 'due to the statement.']

Section 845. The Fallacy of Equivocation [Greek: òmonumía] consists in an ambiguous use of any of the three terms of a syllogism. If, for instance, anyone were to argue thus--

No human being is made of paper,
All pages are human beings,
.'. No pages are made of paper--

the conclusion would appear paradoxical, if the minor term were there taken in a different sense from that which it bore in its proper premiss. This therefore would be an instance of the fallacy of Equivocal Minor.

Section 846. For a glaring instance of the fallacy of Equivocal Major, we may take the following--

No courageous creature flies,
The eagle is a courageous creature,
.'. The eagle does not fly--

the conclusion here becomes unsound only by the major being taken ambiguously.

Section 847. It is, however, to the middle term that an ambiguity most frequently attaches. In this case the fallacy of equivocation assumes the special name of the Fallacy of Ambiguous Middle. Take as an instance the following--

Faith is a moral virtue.
To believe in the Book of Mormon is faith.
.'. To believe in the Book of Mormon is a moral virtue.

Here the premisses singly might be granted; but the conclusion would probably be felt to be unsatisfactory. Nor is the reason far to seek. It is evident that belief in a book cannot be faith in any sense in which that quality can rightly be pronounced to be a moral virtue.

Section 848. The Fallacy of Amphiboly ([Greek: ámphibolía]) is an ambiguity attaching to the construction of a proposition rather than to the terms of which it is composed. One of Aristotle's examples is this--

[Greek: tò boúlesthai labeîn me toùs polemíous]

which may be interpreted to mean either 'the fact of my wishing to take the enemy,' or 'the fact of the enemies' wishing to take me.' The classical languages are especially liable to this fallacy owing to the oblique construction in which the accusative becomes subject to the verb. Thus in Latin we have the oracle given to Pyrrhus (though of course, if delivered at all, it must have been in Greek)--

Aio te, AEacida, Romanos vincere posse.
Pyrrhus the Romans shall, I say, subdue (Whately),
[Footnote: Cicero, De Divinatione, ii. Section 116; Quintilian, Inst. Orat. vii 9, Section 6.]

which Pyrrhus, as the story runs, interpreted to mean that he could conquer the Romans, whereas the oracle subsequently explained to him that the real meaning was that the Romans could conquer him. Similar to this, as Shakspeare makes the Duke of York point out, is the witch's prophecy in Henry VI (Second Part, Act i, sc. 4),

The duke yet lives that Henry shall depose.

An instance of amphiboly may be read on the walls of Windsor Castle--Hoc fecit Wykeham. The king mas incensed with the bishop for daring to record that he made the tower, but the latter adroitly replied that what he really meant to indicate was that the tower was the making of him. To the same head may be referred the famous sentence--'I will wear no clothes to distinguish me from my Christian brethren.'

Section 849. The Fallacy of Composition [Greek: diaíresis] is likewise a case of ambiguous construction. It consists, as expounded by Aristotle, in taking words together which ought to be taken separately, e.g.

'Is it possible for a man who is not writing to write?'
'Of course it is.'
'Then it is possible for a man to write without writing.'

And again--

'Can you carry this, that, and the other?' 'Yes.'
'Then you can carry this, that, and the other,'--

a fallacy against which horses would protest, if they could.

Section 850. It is doubtless this last example which has led to a convenient misuse of the term 'fallacy of composition' among modern writers, by whom it is defined to consist in arguing from the distributive to the collective use of a term.

Section 851. The Fallacy of Division ([Greek: diaíresis]), on the other hand, consists in taking words separately which ought to be taken together, e.g.

[Greek: ègó s' êteka doûlon ônt' èleúteron [Footnote: Evidently the original of the line in Terence's Andria, 37,--feci ex servo ut esses libertus mihi.],

where the separation of [Greek: doûlon] from [Greek: ôntra] would lead to an interpretation exactly contrary to what is intended.

And again--

[Greek: pentékont' àndrôn èkatòn lípe dîos Àchilleús],

where the separation of [Greek: àndrôn] from [Greek: èkatòn] leads to a ludicrous error.

Any reader whose youth may have been nourished on 'The Fairchild Family' may possibly recollect a sentence which ran somewhat on this wise--'Henry,' said Mr. Fairchild, 'is this true? Are you a thief and a liar too?' But I am afraid he will miss the keen delight which can be extracted at a certain age from turning the tables upon Mr. Fairchild thus--Henry said, 'Mr. Fairchild, is this true? Are you a thief and a liar too?'

Section 852. The fallacy of division has been accommodated by modern writers to the meaning which they have assigned to the fallacy of composition. So that by the 'fallacy of division' is now meant arguing from the collective to the distributive use of a term. Further, it is laid down that when the middle term is used distributively in the major premiss and collectively in the minor, we have the fallacy of composition; whereas, when the middle term is used collectively in the major premiss and distributively in the minor, we have the fallacy of division. Thus the first of the two examples appended would be composition and the second division.

(1) Two and three are odd and even.
Five is two and three.
.'. Five is odd and even.

(2) The Germans are an intellectual people.
Hans and Fritz are Germans.
.'. They are intellectual people.

Section 853. As the possibility of this sort of ambiguity is not confined to the middle term, it seems desirable to add that when either the major or minor term is used distributively in the premiss and collectively in the conclusion, we have the fallacy of composition, and in the converse case the fallacy of division. Here is an instance of the latter kind in which the minor term is at fault--

Anything over a hundredweight is too heavy to lift.
These sacks (collectively) are over a hundredweight.
.'. These sacks (distributively) are too heavy to lift.

Section 854. The ambiguity of the word 'all,' which has been before commented upon (Section 119), is a great assistance in the English language to the pair of fallacies just spoken of.

Section 835. The Fallacy of Accent ([Greek: prosodía]) is neither more nor

less than a mistake in Greek accentuation. As an instance Aristotle gives Iliad xxiii. 328, where the ancient copies of Homer made nonsense of the words [Greek: tò mèn oú katapútetai ómbro] by writing [Greek: oû] with the circumflex in place of [Greek: oú] with the acute accent. [Footnote: This goes to show that the ancient Greeks did not distinguish in pronunciation between the rough and smooth breathing any more than their modern representatives.] Aristotle remarks that the fallacy is one which cannot easily occur in verbal argument, but rather in writing and poetry.

Section 856. Modern writers explain the fallacy of accent to be the mistake of laying the stress upon the wrong part of a sentence. Thus when the country parson reads out, 'Thou shall not bear false witness against thy neighbour,' with a strong emphasis upon the word 'against,' his ignorant audience leap [sic] to the conclusion that it is not amiss to tell lies provided they be in favour of one's neighbour.

Section 857. The Fallacy of Figure of Speech [Greek: tò schêma tês léxeos] results from any confusion of grammatical forms, as between the different genders of nouns or the different voices of verbs, or their use as transitive or intransitive, e.g. [Greek: úgiaínein] has the same grammatical form as [Greek: témnein] or [Greek: oìkodomeîn], but the former is intransitive, while the latter are transitive. A sophism of this kind is put into the mouth of Socrates by Aristophanes in the Clouds (670-80). The philosopher is there represented as arguing that [Greek: kápdopos] must be masculine because [Greek: Kleónumos] is. On the surface this is connected with language, but it is essentially a fallacy of false analogy.

Section 858. To this head may be referred what is known as the Fallacy of Paronymous Terms. This is a species of equivocation which consists in slipping from the use of one part of speech to that of another, which is derived from the same source, but has a different meaning. Thus this fallacy would be committed if, starting from the fact that there is a certain probability that a hand at whist will consist of thirteen trumps, one were to proceed to argue that it was probable, or that he had proved it.

Section 859. We turn now to the tricks of refutation which lie outside the language, whether the deception be due to the assumption of a false premiss or to some unsoundness in the reasoning.

Section 860. The first on the list is the Fallacy of Accident ([Greek: tò sumbebekós]). This fallacy consists in confounding an essential with an accidental difference, which is not allowable, since many things

are the same in essence, while they differ in accidents. Here is the sort of example that Aristotle gives--

> 'Is Plato different from Socrates ?' 'Yes.' 'Is Socrates a man ?' 'Yes.' 'Then Plato is different from man.'

To this we answer--No: the difference of accidents between Plato and Socrates does not go so deep as to affect the underlying essence. To put the thing more plainly, the fallacy lies in assuming that whatever is different from a given subject must be different from it in all respects, so that it is impossible for them to have a common predicate. Here Socrates and Plato, though different from one another, are not so different but that they have the common predicate 'man.' The attempt to prove that they have not involves an illicit process of the major.

Section 861. The next fallacy suffers from the want of a convenient name. It is called by Aristotle [Greek: tò áplos tóde ê pê légestai kaì mè kupíos] or, more briefly, [Greek: tò áplôs ê mé], or [Greek: tò pê kaí áplôs], and by the Latin writers 'Fallacia a dicto secundum quid ad dictum simpliciter.' It consists in taking what is said in a particular respect as though it held true without any restriction, e.g., that because the nonexistent ([Greek: tò mè ôn]) is a matter of opinion, that therefore the non-existent is, or again that because the existent ([Greek: tò ôn]) is not a man, that therefore the existent is not. Or again, if an Indian, who as a whole is black, has white teeth, we should be committing this species of fallacy in declaring him to be both white and not-white. For he is only white in a certain respect ([Greek: pê]), but not absolutely ([Greek: àplôs]). More difficulty, says Aristotle, may arise when opposite qualities exist in a thing in about an equal degree. When, for instance, a thing is half white and half black, are we to say that it is white or black? This question the philosopher propounds, but does not answer. The force of it lies in the implied attack on the Law of Contradiction. It would seem in such a case that a thing may be both white and not-white at the same time. The fact is--so subtle are the ambiguities of language--that even such a question as 'Is a thing white or not-white?' straightforward, as it seems, is not really a fair one. We are entitled sometimes to take the bull by the horns, and answer with the adventurous interlocutor in one of Plato's dialogues--'Both and neither.' It may be both in a certain respect, and yet neither absolutely.

Section 862. The same sort of difficulties attach to the Law of Excluded Middle, and may be met in the same way. It might, for instance, be urged that it could not be said with truth of the statue seen by

Nebuchadnezzar in his dream either that it was made of gold or that it was not made of gold: but the apparent plausibility of the objection would be due merely to the ambiguity of language. It is not true, on the one hand, that it was made of gold (in the sense of being composed entirely of that metal); and it is not true, on the other, that it was not made of gold (in the sense of no gold at all entering into its composition). But let the ambiguous proposition be split up into its two meanings, and the stringency of the Law of Excluded Middle will at once appear--

(1) It must either have been composed entirely of gold or not.

(2) Either gold must have entered into its composition or not.

Section 863. By some writers this fallacy is treated as the converse of the last, the fallacy of accident being assimilated to it under the title of the 'Fallacia a dicto simpliciter ad dictum secundum quid.' In this sense the two fallacies may be defined thus.

The Fallacy of Accident consists in assuming that what holds true as a general rule will hold true under some special circumstances which may entirely alter the case. The Converse Fallacy of Accident consists in assuming that what holds true under some special circumstances must hold true as a general rule.

The man who, acting on the assumption that alcohol is a poison, refuses to take it when he is ordered to do so by the doctor, is guilty of the fallacy of accident; the man who, having had it prescribed for him when he was ill, continues to take it morning, noon, and night, commits the converse fallacy.

Section 864. There ought to be added a third head to cover the fallacy of arguing from one special case to another.

Section 865. The next fallacy is Ignoratio Elenchi [Greek: èlégchou âgnoia]. This fallacy arises when by reasoning valid in itself one establishes a conclusion other than what is required to upset the adversary's assertion. It is due to an inadequate conception of the true nature of refutation. Aristotle therefore is at the pains to define refutation at full length, thus--

'A refutation [Greek: êlegchos] is the denial of one and the same--not name, but thing, and by means, not of a synonymous term, but of the same term, as a necessary consequence from the data, without assumption of the point originally at issue, in the same respect, and in the same relation, and in the same way, and at the same time.'

The ELENCHUS then is the exact contradictory of the opponent's assertion under the terms of the law of contradiction. To establish by a syllogism, or series of syllogisms, any other proposition, however slightly different, is to commit this fallacy. Even if the substance of the contradiction be established, it is not enough unless the identical words of the opponent are employed in the contradictory. Thus if his thesis asserts or denies something about [Greek: lópion], it is not enough for you to prove the contradictory with regard to [Greek: ìmátion]. There will be need of a further question and answer to identify the two, though they are admittedly synonymous. Such was the rigour with which the rules of the game of dialectic were enforced among the Greeks!

Section 866. Under the head of Ignoratio Elenchi it has become usual to speak of various forme of argument which have been labelled by the Latin writers under such names as 'argumentum ad hominem,' 'ad populum,' 'ad verecundiam,' 'ad ignorantiam,' 'ad baculum'--all of them opposed to the 'argumentum ad rem' or 'ad judicium.'

Section 867. By the 'argumentum ad hominem' was perhaps meant a piece of reasoning which availed to silence a particular person, without touching the truth of the question. Thus a quotation from Scripture is sufficient to stop the mouth of a believer in the inspiration of the Bible. Hume's Essay on Miracles is a noteworthy instance of the 'argumentum ad hominem' in this sense of the term. He insists strongly on the evidence for certain miracles which he knew that the prejudices of his hearers would prevent their ever accepting, and then asks triumphantly if these miracles, which are declared to have taken place in an enlightened age in the full glare of publicity, are palpably imposture, what credence can be attached to accounts of extraordinary occurrences of remote antiquity, and connected with an obscure corner of the globe? The 'argumentum ad judicium' would take miracles as a whole, and endeavour to sift the amount of truth which may lie in the accounts we have of them in every age. [Footnote: On this subject see the author's Attempts at Truth (Trubner & Co.), pp. 46-59.]

Section 868. In ordinary discourse at the present day the term 'argumentum ad hominem' is used for the form of irrelevancy which consists in attacking the character of the opponent instead of combating his arguments, as illustrated in the well-known instructions to a barrister--'No case: abuse the plaintiff's attorney.'

Section 869. The 'argumentum ad populum' consists in an appeal to the passions of one's audience. An appeal to passion, or to give it a less question-begging name, to feeling, is not necessarily amiss. The heart

of man is the instrument upon which the rhetorician plays, and he has to answer for the harmony or the discord that comes of his performance.

Section 870. The 'argumentum ad verecundiam' is an appeal to the feeling of reverence or shame. It is an argument much used by the old to the young and by Conservatives to Radicals.

Section 871. The 'argumentum ad ignorantiam' consists simply in trading on the ignorance of the person addressed, so that it covers any kind of fallacy that is likely to prove effective with the hearer.

Section 872. The 'argumentum ad baculum' is unquestionably a form of irrelevancy. To knock a man down when he differs from you in opinion may prove your strength, but hardly your logic.

A sub-variety of this form of irrelevancy was exhibited lately at a socialist lecture in Oxford, at which an undergraduate, unable or unwilling to meet the arguments of the speaker, uncorked a bottle, which had the effect of instantaneously dispersing the audience. This might be set down as the 'argumentum ad nasum.'

Section 873. We now come to the Fallacy of the Consequent, a term which has been more hopelessly abused than any. What Aristotle meant by it was simply the assertion of the consequent in a conjunctive proposition, which amounts to the same thing as the simple conversion of A (Section 489), and is a fallacy of distribution. Aristotle's example is this--

If it has rained, the ground is wet.
.'. If the ground is wet, it has rained.

This fallacy, he tells us, is often employed in rhetoric in dealing with presumptive evidence. Thus a speaker, wanting to prove that a man is an adulterer, will argue that he is a showy dresser, and has been seen about at nights. Both these things however may be the case, and yet the charge not be true.

Section 874. The Fallacy of Petitio or Assumptio Principii [Greek: tò èn àrchê aìteîstai or lambánein] to which we now come, consists in an unfair assumption of the point at issue. The word [Greek: aìteîstai], in Aristotle's name for it points to the Greek method of dialectic by means of question and answer. This fact is rather disguised by the mysterious phrase 'begging the question.' The fallacy would be committed when you asked your opponent to grant, overtly or covertly, the very proposition originally propounded for discussion.

Section 875. As the question of the precise nature of this fallacy is of some importance we will take the words of Aristotle himself (Top. viii. 13. SectionSection 2, 3). 'People seem to beg the question in five ways. First and most glaringly, when one takes for granted the very thing that has to be proved. This by itself does not readily escape detection, but in the case of "synonyms," that is, where the name and the definition have the same meaning, it does so more easily. [Footnote: Some light is thrown upon this obscure passage by a comparison with Cat. I. Section 3, where 'synonym' is defined. To take the word here in its later and modern sense affords an easy interpretation, which is countenanced by Alexander Aphrodisiensis, but it is flat against the usage of Aristotle, who elsewhere gives the name 'synonym,' not to two names for the same thing, but to two things going under the same name. See Trendelenberg on the passage.]

Secondly, when one assumes universally that which has to be proved in particular, as, if a man undertaking to prove that there is one science of contraries, were to assume that there is one science of opposites generally. For he seems to be taking for granted along with several other things what he ought to have proved by itself.

Thirdly, when one assumes the particulars where the universal has to be proved; for in so doing a man is taking for granted separately what he was bound to prove along with several other things. Again, when one assumes the question at issue by splitting it up, for instance, if, when the point to be proved is that the art of medicine deals with health and disease, one were to take each by itself for granted.

Lastly, if one were to take for granted one of a pair of necessary consequences, as that the side is incommensurable with the diagonal, when it is required to prove that the diagonal is incommensurable with the side.'

Section 876. To sum up briefly, we may beg the question in five ways--

(1) By simply asking the opponent to grant the point which requires to be proved;

(2) by asking him to grant some more general truth which involves it;

(3) by asking him to grant the particular truths which it involves;

(4) by asking him to grant the component parts of it in detail;

(5) by asking him to grant a necessary consequence of it.

Section 877. The first of these five ways, namely, that of begging the question straight off, lands us in the formal fallacy already spoken of (Section 838), which violates the first of the general rules of syllogism, inasmuch as a conclusion is derived from a single premiss, to wit, itself.

Section 878. The second, strange to say, gives us a sound syllogism in Barbara, a fact which countenances the blasphemers of the syllogism in the charge they bring against it of containing in itself a petitio principii. Certainly Aristotle's expression might have been more guarded. But it is clear that his quarrel is with the matter, not with the form in such an argument. The fallacy consists in assuming a proposition which the opponent would be entitled to deny. Elsewhere Aristotle tells us that the fallacy arises when a truth not evident by its own light is taken to be so. [Footnote: [Greek: Ôtan tò mè dí aùtoû gnostòn dí aùtoû tis èpicheiraê deiknúnai, tót' aìteîtai tò èx àrchês.]. Anal. Pr. II. 16. Section I ad fin.]

Section 879. The third gives us an inductio per enumerationem simplicem, a mode of argument which would of course be unfair as against an opponent who was denying the universal.

Section 880. The fourth is a more prolix form of the first.

Section 881. The fifth rests on Immediate Inference by Relation (Section 534).

Section 882. Under the head of petitio principii comes the fallacy of Arguing in a Circle, which is incidental to a train of reasoning. In its most compressed form it may be represented thus--

(1) B is A.
C is B.
.'. C is A.

(2) C is A.
B is C.
.'. B is A.

Section 883. The Fallacy of Non causa pro causa ([Greek: tò mè aîtion] or [Greek: aîtoin]) is another, the name of which has led to a complete misinterpretation. It consists in importing a contradiction into the discussion, and then fathering it on the position controverted. Such arguments, says Aristotle, often impose upon the users of them themselves. The instance he gives is too recondite to be of general interest.

Section 884. Lastly, the Fallacy of Many Questions ([Greek: tò tà déo èrotémata ên poieîn]) is a deceptive form of interrogation, when a single answer is demanded to what is not really a single question. In dialectical discussions the respondent was limited to a simple 'yes' or 'no'; and in this fallacy the question is so framed as that either answer would seem to imply the acceptance of a proposition which would be repudiated. The old stock instance will do as well as another--'Come now, sir, answer "yes" or "no." Have you left off beating your mother yet?' Either answer leads to an apparent admission of impiety.

A late Senior Proctor once enraged a man at a fair with this form of fallacy. The man was exhibiting a blue horse; and the distinguished stranger asked him--'With what did you paint your horse?'