CHAPTER IX.

Of Mood and Figure.

Section 558. Syllogisms may differ in two ways--

  (1) in Mood;

  (2) in Figure.

Section 559. Mood depends upon the kind of propositions employed. Thus a
syllogism consisting of three universal affirmatives, AAA, would be
said to differ in mood from one consisting of such propositions as EIO
or any other combination that might be made. The syllogism previously
given to prove the fallibility of the Pope belongs to the mood
AAA. Had we drawn only a particular conclusion, 'Some Popes are
fallible,' it would have fallen into the mood AAI.

Section 560. Figure depends upon the arrangement of the terms in the
propositions. Thus a difference of figure is internal to a difference
of mood, that is to say, the same mood can be in any figure.

Section 561. We will now show how many possible varieties there are of mood
and figure, irrespective of their logical validity.

Section 562. And first as to mood.

Since every syllogism consists of three propositions, and each of
these propositions may be either A, E, I, or O, it is clear that there
will be as many possible moods as there can be combinations of four
things, taken three together, with no restrictions as to
repetition. It will be seen that there are just sixty-four of such
combinations. For A may be followed either by itself or by E, I, or
O. Let us suppose it to be followed by itself. Then this pair of
premisses, AA, may have for its conclusion either A, E, I, or O, thus
giving four combinations which commence with AA. In like manner there
will be four commencing with AE, four with AI, and four with AO,
giving a total of sixteen combinations which commence with
A. Similarly there will be sixteen commencing with E, sixteen with I,
sixteen with O--in all sixty-four. It is very few, however, of these
possible combinations that will be found legitimate, when tested by
the rules of syllogism.

Section 563. Next as to figure.

There are four possible varieties of figure in a syllogism, as may be seen by considering the positions that can be occupied by the middle term in the premisses. For as there are only two terms in each premiss, the position occupied by the middle term necessarily determines that of the others. It is clear that the middle term must either occupy the same position in both premisses or not, that is, it must either be subject in both or predicate in both, or else subject in one and predicate in the other. Now, if we are not acquainted with the conclusion of our syllogism, we do not know which is the major and which the minor term, and have therefore no means of distinguishing between one premiss and another; consequently we must Stop here, and say that there are only three different arrangements possible. But, if the Conclusion also be assumed as known, then we are able to distinguish one premiss as the major and the other as the minor; and so we can go further, and lay down that, if the middle term does not hold the same position in both premisses, it must either be subject in the major and predicate in the minor, or else predicate in the major and subject in the minor.

Section 564. Hence there result

  The Four Figures.

When the middle term is subject in the major and predicate in the minor, we are said to have the First Figure.

When the middle term is predicate in both premisses, we are said to have the Second Figure.

When the middle term is subject in both premisses, we are said to have the Third Figure.

When the middle term is predicate in the major premiss and subject in the minor, we are said to have the Fourth Figure.

Section 565. Let A be the major term; B the middle. C the minor.

 Figure I. Figure II. Figure III. Figure IV.
  B--A   A--B   B--A   A--B
  C--B   C--B   B--C   B--C
  C--A   C--A   C--A   C--A

All these figures are legitimate, though the fourth is comparatively valueless.

Section 566. It will be well to explain by an instance the meaning of the

asserition previously made, that a difference of figure is internal to a difference of mood. We will take the mood EIO, and by varying the position of the terms, construct a syllogism in it in each of the four figures.

I.
  E No wicked man is happy.
  I Some prosperous men are wicked.
  O .'. Some prosperous men are not happy.

II.
  E No happy man is wicked.
  I Some prosperous men are wicked.
  O .'. Some prosperous men are not happy.

III.
  E No wicked man is happy.
  I Some wicked men are prosperous.
  O .'. Some prosperous men are not happy.

IV.
  E No happy man is wicked.
  I Some wicked men are prosperous.
  O .'. Some prosperous men are not happy.

Section 567. In the mood we have selected, owing to the peculiar nature of the premisses, both of which admit of simple conversion, it happens that the resulting syllogisms are all valid. But in the great majority of moods no syllogism would be valid at all, and in many moods a syllogism would be valid in one figure and invalid in another. As yet however we are only concerned with the conceivable combinations, apart from the question of their legitimacy.

Section 568. Now since there are four different figures and sixty-four different moods, we obtain in all 256 possible ways of arranging three terms in three propositions, that is, 256 possible forms of syllogism.