point out that this is one of the propositions in which Euclid defines, by illustration, the use of the hypothesis. In this instance, the hypothesis is assumed to be true, and is then made to temporarily occupy the place of, and serve as a fact, so that combination can be carried forward and the results tested by comparison. The terms in which this proposition is stated require particular notice, in regard to the sense in which the expression 'square of the diameter' is used; for, the very same expression is used in the kindred science of 'Number and Quantity,' and is used therein in an essentially different sense. Since, therefore, we are here, almost on the border land which connects these two sciences, there is much danger of the expression used in the sense belonging to the one science being mistaken for the same expression used in the sense belonging to the other science. The proposition under consideration is thus stated in the Elements of Euclid, 'Circles are to each other as the squares of their diameters.' The expression 'square of the diameter' here means (as used by Euclid) a square of which the diameter of the circle is one of the four equal sides. The statement would therefore have the same (equivalent) meaning if the word 'square' be left out and we read simply 'circles are to each other as their diameters.' To demonstrate the one statement is to demonstrate the other; because if two magnitudes be proportional one to the other, equimultiples of those magnitudes are proportional in the same ratio; and, if equimultiples of those magnititudes be taken from them respectively, the remainders are likewise proportional in the same ratio. But in the applied science of 'Number and Quantity,' the same expression, 'square of the diameter,' has a different meaning.

To correctly appreciate the nature of the difference it is necessary to observe that all 'Number' or 'Quantity' is relative. It has, always, reference to a standard of