

Let us briefly examine the essential characteristics of the scientific system taught by Euclid,—and also the arrangement of Euclid's formal method.

The first essential of the system is that there shall be a simple (elementary) basis . . . of which the reality, actuality, or truth, is absolutely certain. This fundamental basis (or each such basis, because there may be an indefinite number) being elementary and manifestly real and true, requires merely to be defined or stated with precision; and it is termed, accordingly,—a *definition*.

A geometrical definition may therefore be called the verbal equivalent of a fact. *

When the basis is not (elementary) quite simple, but requires only a brief explanation to satisfy the reasonable mind as to its unquestionable truth or reality . . . it is called—an *axiom*.

(Strictly speaking an axiom is a proposition or theorem, of which the manifest truth becomes so readily apparent as to render formal demonstration unnecessary; or in some instances, the definite statement of the axiom may include its demonstration.) † The postulates of Euclid's 'elements' are the rules of his systematic method,

* It may be said to assert the existence of the fact which it defines.

† Therefore it is in the same case with the definition, and it may be considered a compound definition; or, the definition may be considered an elementary axiom. In either case there is the definition only of a reasonable recognition by the mind of an actual existence or reality. (Def.) *e. g.*, 'A straight line is that which lies evenly between its points,' the mind at once recognizes and *reasonably* accepts the *fact*, which is manifest whether the line be considered only a natural or only an ideal reality. (Axiom.) *e. g.*, 'The whole is greater than its part,' the comparison has already been made by the mind, and the inter-relation of the two things, thus defined, is at once recognized by the mind as actual, (*i. e.*, as an ideal fact.)