

ner in the nineteenth proposition of the sixth Book in the words "similar triangles are to one another in the duplicate ratio of their homologous sides"—a statement which is singularly deficient in accuracy inasmuch as it omits to say precisely what two qualities or quantities connected with the triangles are thus related (colours, shapes, sizes, or what?); and the result is absolute confusion in the minds of a very large number of boys.

Let me illustrate this by a few *bona fide* examples. In reply to the question, "What are similar triangles, and what is the relation between their areas?" the following answers were received:—

(1) A triangle is similar to another triangle when their sides are proportional, and when the homologous sides of one are in duplicate ratio to the homologous sides of the other.

(2) If two triangles have the sides about an angle in each proportional and the other angles of the same affection, the triangles are similar. Similar triangles are proportional to the bases on which they stand, and are to one another in the duplicate ratio of their homologous sides.

(3) Similar triangles are those which are equal in area to each other and are in the same proportion to each other as the duplicate ratio of their homologous sides.

(4) When the angles are similar the areas are similar; when the areas are similar the angles are similar; when the sides are similar the areas are similar.

(5) Similar triangles are equal in all respects—sides equal to sides, angles equal to angles, areas equal to areas. Similar triangles are to each other as their bases.

(6) Similar triangles are to one another in the duplicate or subduplicate ratio of their homologous sides. Their areas are as the square or square root of their bases according as it is in the duplicate or subduplicate ratio.

(7) Similar triangles are to one another as their bases. They are also to each other in the duplicate ratio of their homologous sides.

(8) Triangles are said to be similar when they have their corresponding sides equal and are equal in area. Similar triangles are to one another in the duplicate ratio of their homologous sides.

Each of these exhibits a pleasing variety and a liberal-minded, large-hearted toleration of conflicting views.