editors of Euclid, feeling that there is something wanting in this definition, have (they think) vastly improved it by saying that "a point is that which has *position* but no magnitude"—as if *position* is more easily grasped than *point.* Then again (still at the threshold of the subject) the beginner is taught to believe that he is getting a very definite conception of a right line in the definition, "a right line is that which lies *evenly* between its extreme points"—as if the meaning of "evenly" is at once beyond question.

But of all the elementary conceptions in Euclid that of an *angle* is the one which most puzzles a beginner, and remains unrealised for the longest time. "An angle is the *inclination* of two straight lines to one another." Here again ws have one obscure term defined by another equally obscure; and we know by experience that, unless the conception is presented in a very different way, the obscurity will be permanent.

Moreover, it is possible to point out a self-contradiction in Euclid. Thus his definition of a circle makes it to be a disc—"a circle is a plain figure *bounded by one line* called the circumference"—so that, clearly, the whole of the space inside (or, possibly, outside) the circumference *is the circle,* whose mere boundary is the circumference; and, if so, two circles can, of course, intersect in an infinite number of points—over an extensive area, in fact; but this is contradicted by Euclid in the tenth proposition of Book III., according to which one circle cannot intersect another in more than two points

These, it may be admitted, are comparatively minor considerations, and the defects might be corrected by judicious teaching.

It is chiefly in the way in which the fifth and sixth Books of Euclid are apprehended by boys that the necessity for a change in the system of teaching is to be seen.

Those mediæval technicalities "duplicate ratio," subduplicate ratio," "sesquiplicate ratio," and some others are drummed into the heads of boys as if they were terms of the utmost scientific importance. What mathematician ever uses such terms, or even thinks of them in his investigations?

The simple and extremely important fact that the areas of two similar figures are to each other as the squares of corresponding linear dimensions is presented to the begin-