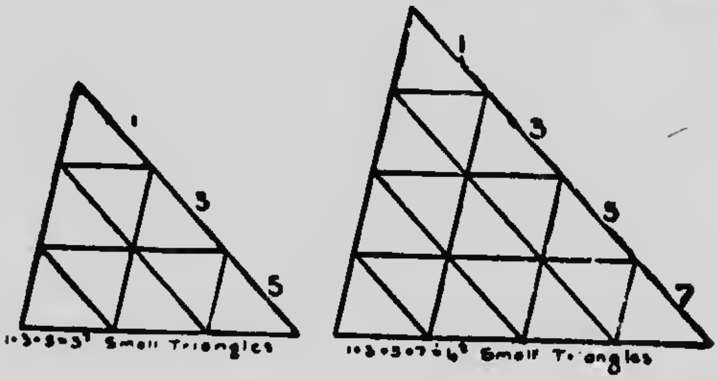
Let any side, say the base, of a triangle be divided into as many parts as it contains nnits of length. Throngh the points of division draw lines parallel to



the sides, and, throngh the points of intersection of these lines, draw lines parallel to the base. The triangle is thus divided into a number of triangles equal to one another in all respects, and all similar to the original triangle. It will be observed that, considering these triangles in rows, the rows contain 1, 3, 5, 7, . . triangles, respectively. Hence if the base be 2 units in length, the large triangle contains $1+3=2^2$ small triangles; if 3 units in length, $1+3+5=3^2$ small triangles; if 4 units in length, $1+3+5+7=4^2$ small triangles; and so on. Thus if there be two similar triangles, the base of one containing 3 nnits of length, and the base of the other 4 units of length, the number of small triangles in one will be 3^2, and in the other 4^2, all such triangles being equal to one another. Hence the areas of the triangles are as 3^2 to 4^2, *i.e.*, as the squares of the bases.