$r = \overset{\text{f.}}{\frac{1}{2}}$; $H = \frac{9}{100}$; $M = \frac{91}{100}$, whose logarithm is —0·04096, that of 2 being +0·30103: so that $a = \frac{1}{2}\sqrt{\frac{30103}{4096}}$ $= \overset{\text{f.}}{1{\cdot}355} = \overset{\text{f. in.}}{1{\cdot}4\ \frac{3}{4}}$; which, doubled, gives $\overset{\text{f. in.}}{2{\cdot}8\ \frac{1}{2}}$ for the diameter of a target which he might make an even bet to hit at the first shot. And according to the values of this constant, so determined in the case of each several competitor, ought their names to be arranged in a prize-list, the smaller values ranking higher than the larger.

(4.) If the object of the competition be merely to arrange the competitors correctly in order of skill at the moment, without deducing for each any definite and normal numerical result expressive of his absolute skill, and comparable with others derived from practice with targets of other dimensions, and at other distances; it is evident that the trouble of any such computation as the above may be spared, since the same precise *order* must necessarily result from merely tabulating the total number of hits of each competitor (practising with an equal number of arrows, and at one and the same distances). Were the number of shots allowed to each immensely large, the same order of merit and the same set of values of the constant a would result from a record of the hits *within the total area* of each of the several circles marked out by the outer circumferences of the gold, red, blue, black, and white colours. The only use of these rings is to give opportunity for a variety of prizes, and that piquancy and interest to the result of a day's shooting