$c = 254.3$ feet, and $\frac{c^9}{24m^4}$ the third term in the above series $= \frac{1}{10}$ of a foot when $c = 518.6$ feet, therefore it is only necessary to use the second term when $D > 4° \text{-} 10'$, and the third when $D > 8° 35'$.

In constructing the table, a value for the constant number m was chosen which would give a reasonable length of transition curve for at least the great majority of cases (viz., those in which the degree of curvature of main curve varies from say 3° to 7°); and which would also give to the table a convenient form for comparison with such tables on circular curves as may be found in the works of Searle, Shunk, etc.; it was found as follows:—

Let the chord distance in feet to any point on transition curve be numerically equal to the number of minutes contained in the degree of curvature at that point, or if D = degree of curvature at the point, then $60D$ will equal the number of minutes in the degree of curvature at the same point

$$\text{that is, Let } c = 60D$$

giving about 60 feet of transition curve for each degree of curvature of main curve

$$\text{by (1) } 60D = \frac{m}{3r}$$

$$\text{but when } D = 1° \quad r = 5729.65$$

$$\text{and } \therefore m = 3,\ 5729.65,\ 60 = 1031337$$

In bending the rails it is also a convenience to know that if the chord length to a point on the transition curve be divided by sixty, the degree of curvature at that point is at once given.