of the fourth harmonic to two points of this envelope and the point of intersection of the secant through these two points with the plane of the singularities of the surface.

YALE UNIVERSITY,
October, 1903.

ON THE GENERATION OF FINITE FROM INFINITESIMAL TRANSFORMATIONS — A CORRECTION.

BY PROFESSOR H. B. NEWSON.

IN a paper entitled " Continuous groups of circular transformations " which the author read before this Society, April 24, 1897, and which was published in the BULLETIN (2) series, volume 4, pages 107–121, there occurs a serious error * which I desire to correct.

The error in question is a misstatement of the number of logarithmic spirals of the family $\rho = e^{(c+i)\theta}$ (where c is a parameter) that pass through a given point of the plane. It was stated on page 114 of the above mentioned paper that in general only two spirals of the family pass through a given point. In fact there are an infinite number of these spirals through a point P.

To show this let, the coördinates of P be $(\rho_1, \theta_1 + 2n\pi)$. Since $\rho_1 = e^{(c+i)(\theta_1 + 2n\pi)}$, then

$$\log \rho_1 \equiv \log r + 2im\pi = c (\theta_1 + 2n\pi) + i (\theta_1 + 2n\pi) ;$$

whence $\log r = c (\theta_1 + 2n\pi)$ or $c = \log r/(\theta_1 + 2n\pi)$. Since n is any integer, c may have any one of an infinite number of values. Thus there are an infinite number of spirals of the family through the point $(\rho_1, \theta_1 + 2n\pi)$. When $n = 0, 1, 2, 3, \cdots$ the corresponding spiral, starting from the origin, makes $0, 1, 2, 3, \cdots$ turns about the origin before passing through the point P.

The last paragraph on page 114 and the first on page 115, including theorems 7 and 8, of the above-mentioned article should be corrected to read as follows :

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* My attention was first called to this error by Professor Frank Morley.