onal substitution, and has an orthogonal mth root for any index m. No orthogonal substitution of the second kind can be generated by the repetition of the same infinitesimal orthogonal substitution. Every orthogonal substitution of the second kind has an orthogonal root with any odd index; and no orthogonal substitution of this kind has an orthogonal root with even index. But, corresponding to any proper orthogonal substitution ϕ of the second kind, can always be found an orthogonal substitution ψ_ρ of the first kind whose coefficients are algebraic functions of a parameter ρ such that, by taking ρ sufficiently small, the $2m$th power of ψ_ρ can be made as nearly as we please equal to ϕ. Moreover, we have

$$\phi = L_{\rho=0}\psi_\rho{}^{2m},$$

but not

$$\phi = \left[L_{\rho=0}\psi_\rho\right]^{2m}.$$

[An exactly similar theory holds for the linear substitutions which automorphically transform a bilinear form with cogrediant variables.]

NOTES.

A REGULAR meeting of the NEW YORK MATHEMATICAL SOCIETY was held Saturday afternoon, June 2, at half-past three o'clock, the president, Dr. McClintock, in the chair. The following persons, having been duly nominated and being recommended by the council, were elected to membership: Mr. William Eimbeck, U. S. Coast and Geodetic Survey, Washington, D. C.; Professor Herman J. Gaertner, Indiana Normal College, Covington, Indiana; Mr. Henry Volkman Gummere, Swarthmore College, Swarthmore, Pa.; Mr. George Herbert Ling, Columbia College, New York. The by-laws were amended in accordance with the recommendations of the council, the amendments to go into effect July 1, 1894.

Dr. Henry Taber read a paper entitled "On orthogonal substitutions." This paper appears in the present number of the BULLETIN, see p. 251.

THE council of the Society, influenced by the high importance of most of the papers presented to the Mathematical Congress at Chicago in 1893, by the desirability of their publication collectively, prepared, as they were, to a large extent, for the purpose of giving a general survey of the present state of knowledge throughout almost the entire range of mathematics, and by a sense of the honor conferred upon America by the contributions of so many distinguished mathematicians resident abroad, has resolved to undertake the publication of