$$\phi\{f_1(t_1, t_2, \cdots, t_n, x_1), f_2(t_1, t_2, \cdots, t_n, x_2), \cdots,$$
$$f_{n+1}(t_1, t_2, \cdots, t_n, x_{n+1})\} = \psi(x_1, x_2, \cdots, x_{n+1}),$$

where $n = 1, 2, 3$, etc. From this class of equations other classes are deduced, first, by the homologous transposition of the x's in the left hand member and, second, by substituting x's for some or all of the t's in the set of equations thus obtained (including the original class). For example, one obtains by homologous transposition of the x's when $n = 2$

$$\phi\{f_1(x_1, t_1, t_2), f_2(x_2, t_1, t_2), f_3(x_3, t_1, t_2)\} = \psi(x_1, x_2, x_3)$$
$$\phi\{f_1(t_1, x_1, t_2), f_2(t_1, x_2, t_2), f_3(t_1, x_3, t_2)\} = \psi(x_1, x_2, x_3).$$

Interesting problems are presented by systems of equations belonging to the same or different classes.

22. The proposition that the accelerations of different bodies under the action of equal forces are inversely proportional to their masses is often asserted to be merely a definition of mass. The object of the paper by Professor Hoskins is to show that, in applying this proposition, our interpretation of it involves the notion of mass as a quantitative measure of the matter of which the bodies are composed.

23. Dr. Bennett considers several topics connected with the iteration of functions of one variable. Matrices with an infinite number of elements are used to obtain a classification of the types of series which are to be distinguished with respect to the nature of their iteration. The different types are considered, with particular reference to questions of convergence. The iteration of functions of a real variable is also considered. The paper will appear in the *Annals of Mathematics.*

THOMAS BUCK,
Acting Secretary.

GROUPLESS TRIAD SYSTEMS ON FIFTEEN ELEMENTS.

BY DR. LOUISE D. CUMMINGS AND PROFESSOR H. S. WHITE.

(Read before the American Mathematical Society April 24, 1915.)

FROM previous publications and a paper presented to this Society in October, 1914, 44 different triad systems on 15 elements (Δ_{15}) are known. These 44 systems separate into two types 23: of the systems each contain one or more systems