absolute invariants.   The binary linear forms give rise in this way to the cross ratio group discussed by Professor Moore in the *American Journal of Mathematics*, 1900.   The groups discussed in detail are those relating to any set (n) of linear forms in any number (k) of variables for both the associated system and the system of absolute invariants, the number of variables being

$$\binom{n}{k} - \binom{n-k}{k} \quad \text{and} \quad (k-1)(n-k-1)$$

respectively.   The process considered is capable of extension in several directions, for example to forms which are not all of the same order, and to the formation of infinite groups.

Mr. Risteen's paper is in abstract as follows : If Euclid's parallel axiom is true, then it is known that the parallax of a double star can be obtained in either of two ways, namely, 1° by the usual micrometric measures, and 2° by observing the relative velocities of approach or recession of the component stars in the line of sight.   If the parallel axiom is not true, and space is admitted to be hyperbolic, then the known trigonometric relations that hold for hyperbolic space, and which were given by Lobachevsky, enable us to combine the micrometric measures and the spectroscopic ones, so as to obtain a single estimate of the star's distance, together with the value of the " constant of space " that occurs in Lobachevsky's equations, but whose value has not yet been determined.   The same principle applies equally well if space is elliptic.   Lobachevsky's method of finding a limiting value for his constant is unsound.   A numerical value of the " constant of space " can hardly be found at present, because the necessary spectroscopic data cannot yet be had.

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THE INFINITESIMAL GENERATORS OF PARAMETER GROUPS.

BY PROFESSOR T. J. I'A. BROMWICH.

§ 1.   DR. SLOCUM has given (BULLETIN, January, 1902, page 156) a method for calculating the infinitesimal gene-