tion * of the matrix A, in order to express the higher powers of A. This leads to tedious work unless the characteristic equation reduces to one in two terms only; for instance, types V and VI (in Slocum's list of three-parameter groups) lead to the equations for A

$$A^2 + a_3 A = 0, \quad A^2 = 0$$

respectively. This method has been used by Dr. H. F. Baker in a recent paper on the calculation of the finite equations of a group from its structural constants (*Proceedings of the London Mathematical Society*, volume 34 (1902), page 91); but Baker's work relates solely to the determination of the matrix which is denoted by B in my notation, *i. e.*, the matrix reciprocal to $f(A)$.

I have not actually applied the last method to any of the harder cases; indeed, I have only used it for the two cases just mentioned, when it gives

Type V. $$f(A) = E + \left(\frac{1}{a_3} - \frac{1}{e^{a_3} - 1}\right) A.$$

Type VI. $$f(A) = E + \tfrac{1}{2}A.$$

It may, however, prove useful as an alternative means of verification.

QUEEN'S COLLEGE, GALWAY,
February 25, 1902.

ON THE PARABOLAS (OR PARABOLOIDS) THROUGH THE POINTS COMMON TO TWO GIVEN CONICS (OR QUADRICS).

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

(Read before the American Mathematical Society, April 26, 1902.)

IN the December issue of the BULLETIN (page 122, December, 1901) Huntington and Whittemore have called attention to the features of conics which touch the line infinity

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* This is obtained as follows: Let $\phi(t)$ be the quotient of the determinant $|tE - A|$ by the highest common factor of all its first minors. Then the equation is

$$\phi(A) = 0.$$

See Frobenius, *Crelle*, vol. 84; and other references given by the present author in a review, BULLETIN, vol. 7 (1900), p. 308.