$M_1M_2N_{121}P_{13}$ are given by respectively 1, 2, 3, 4, 5, 6 independent linear relations between the variables, so that a suitable combination of these types leads to a substitution of class $2^{2nm} - 2^{nt}$. For $G_{\lambda'}$, we note that L and $M_1M_mN_{m11}$ (in the notations of Linear Groups, page 201) leave fixed the letters with $\xi_m = \eta_m = 0$, $\xi_m = \eta_m = \xi_1 = \eta_1 = 0$, respectively.

9. THEOREM VII. *The subgroup* * J_λ *of index two under* G_λ *contains substitutions of classes* $2^{2nm} - 2^{2nj} (j = 0, 1, \cdots, m-1)$ *exclusively.*

I have established this theorem for low values of m with n arbitrary; but as the method seems unwieldy for general m, I suppress the proof. This remarkable theorem in connection with Theorem VI furnishes an analogue to Theorem V.

THE UNIVERSITY OF CHICAGO,
February 10, 1905.

NOTE ON A PROBLEM IN MECHANICS.

BY MR. A. M. HILTEBEITEL.

(Read before the American Mathematical Society, February 25, 1905.)

IN an article † inserted in the twenty-eighth volume of the *Giornale di Matematiche*,‡ on the separation of the variables in the equations of the motion of a body acted upon by two fixed centers of force, the author, Dr. Carlo Bonacini, states with inadequate proof that the separation of the variables in the equations of motion is possible only when the two forces vary inversely as the squares of the respective distances of the body from the fixed centers.

That the variables can be separated when the forces vary inversely as the squares of the distances has been known since

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* Linear Groups, p. 206, § 205.

† "Sulla separazione delle variabili nelle equazioni del moto di un punto soggetto all'azione di due centri fissi," *Giornale di Matematiche*, vol. 28 (1890), pp. 132-137. (Date of article, May, 1889.)

‡ The object of the paper is given by the author in the following words: "Noi dimostreremo a questo proposito che la separazione delle variabili nelle equazioni del moto è possibile solo quando le due forze sono Newtoniane."