grals have periods that are associated with the $2p$ cross-cuts that are needed to reduce the surface to simple connection; some pages are assigned to Abel's Theorem and to the theorem of Riemann-Roch, and the final section treats of the problem of inversion and of the properties of the special theta-functions that are needed for the purposes of this inversion.

It will be seen from what we have said that this second volume contains a great wealth of material, and that much that has been previously dark is cleared up by M. Jordan's new researches. It may safely be affirmed that no students of the *methods* of the Differential and Integral Calculus can afford to neglect the Cours d'Analyse in its new form. From beginning to end the reader feels that he is being guided by a master-hand.

J. HARKNESS.

ON A THEOREM CONCERNING p-ROWED CHARACTERISTICS WITH DENOMINATOR 2.

BY PROFESSOR E. HASTINGS MOORE.

MR. PRYM'S book, *Untersuchungen über die Riemann'sche Thetaformel und die Riemann'sche Charakteristikentheorie* (Leipzig, 1882), has as a brief third part, *Beweis einiger Charakteristikensätze.* I recall the terms and theorems in question:

A p-rowed characteristic * is a complex

$$\begin{bmatrix} \epsilon_1 \, \epsilon_2 \ldots \epsilon_p \\ \epsilon_1' \epsilon_2' \ldots \epsilon_p' \end{bmatrix}$$

whose $2p$ elements $\epsilon_1 \ldots \epsilon_p'$ are integers taken modulo 2. The notation $[\epsilon]$ is used.

A characteristic is even or odd according as

$$\sum_{\nu=1}^{\nu=p} \epsilon_\nu \epsilon_\nu' = 0 \text{ or } 1. \quad (\text{mod. } 2.)$$

(Theorem I.) There are in all 2^{2p} p-rowed characteristics, of which $g_p = 2^{p-1}(2^p + 1)$ are even and $u_p = 2^{p-1}(2^p - 1)$ are odd.

* The elements of the complex are the numerators of fractions having the common *denominator* 2 which enter in the definition of the theta function of p variables.