that is,

$$-fde_1de_2\left[\frac{1}{\{x_0^2+(1-v_0^2)(y^2+z^2)\}^{\frac{1}{2}}}-\frac{(1-v_0^2)y^2}{\{x_0^2+(1-v_0^2)(y^2+z^2)\}^{\frac{3}{2}}}\right].$$

Integrating as in the previous cases, we have

$$-f\cdot\frac{6}{5}\cdot\frac{e^2}{2a}\left\{\frac{1}{v_0}\log\frac{1+v_0}{1-v_0}-\frac{(1-v_0^2)\partial}{2v_0\partial v_0}\left(\frac{1}{v_0}\log\frac{1+v_0}{1-v_0}\right)\right\}$$

or

$$-f\cdot\frac{6}{5}\cdot\frac{e^2}{2av_0^2}\left\{\frac{1+v_0^2}{2v_0}\log\frac{1+v_0}{1-v_0}-1\right\},$$

which gives Abraham's expression for the transverse mass.

CORNELL UNIVERSITY,
March, 1908.

THE RECENTLY DISCOVERED MANUSCRIPT OF ARCHIMEDES.

PROFESSOR J. L. Heiberg has published two important accounts of his recent discovery of a new manuscript of Archimedes, both of which are of great interest to mathematicians. The first of these accounts is printed in volume 42 of *Hermes*. It contains the Greek text of a lost treatise of Archimedes, which is recovered nearly complete in the newly found manuscript. A German translation of the Greek text, and an interesting commentary by Zeuthen, is printed by Heiberg in the *Bibliotheca Mathematica*, volume 7, page 321.

Professor Heiberg's critical study of Archimedes has extended over a period of more than thirty years. His dissertation, "Quæstiones Archimedeæ" (Copenhagen, 1879), is constantly referred to by students of Archimedes, both on account of its scholarly critique of Archimedes's work, and on account of the innumerable references to Archimedean literature which are there brought together for the first time. In 1880–1881 Heiberg published the definitive edition of Archimedes, with which his name is usually associated. It was while at work upon a second edition of this book that Heiberg's attention was directed to a palimpsest manuscript of mathematical content recently catalogued in a cloister at Constantinople. Failing in an attempt to have the manuscript sent to him at Copen-