The important thing here is fundamental to the whole question of notation and particularly to notational interchangeability. The rule of differentiation in situ and the ordinary rules for the use of dot and cross in vector algebra taken with the identity $\int dS() = -\int d\tau()$ suffice to prove all Dr. Poor's theorems and many others of the sort without reference to any list of formulas—the whole thing has become mere formal operation which for a student of Hamilton, Tait, Gibbs, and McAulay is in the same category as the work

$$a - \frac{1}{a} = \frac{a^2 - 1}{a} = \frac{(a + 1)(a - 1)}{a}$$

is for the schoolboy.* If this is equally true of the student of Burali-Forti and Marcolongo, I am both surprised and happy.

ON PIERPONT'S INTEGRAL. REPLY TO PROFESSOR PIERPONT.

BY PROFESSOR MAURICE FRÉCHET.

My single aim in my previous contribution to this journal ("On Pierpont's definition of integrals," volume 22, number 6, March, 1916) was to point out that, in my own words, *this new definition is inappropriate. I still hold to my original assertion* (though for partly different reasons) and will show why I do so.

Thus the question whether two non-measurable sets with no points in common are separated or not is far from being the vital point. This being explicitly stated, I hasten to say that *concerning this last particular question,* Professor Pierpont is entirely justified in saying: "Professor Fréchet has been misled at this point . . . and his example establishes not an error on my part but a carelessness of reasoning on his." As a matter of fact, I too quickly assimilated in my mind "separated" with "having no point in common." The same thing occurred with the word "exterior" and my objection to theorem 341, page 346 arose from a miscon-

* It would not have been obvious to the schoolboy, perhaps not even to a professional mathematician, in the days before a suitable notation for elementary algebra had been developed.