I trust that I have now made clear my own feelings regarding the three questions raised at the outset; first, as to why divergent series have come into such prominence since the appearance of the early volumes of the encyclopedia, second, what has been done that really constitutes a vital advance and third, as to whether such series are at last upon a truly scientific basis. My only fear is that in attempting to couch the whole in very simple form I may have gone too far in this direction and thus violated a principle which, I believe it is said, the poet Browning always carefully observed; namely, of never using so simple a style that the intelligence of one's readers or hearers may be offended. But this is a rather treacherous principle, as most people discover in attempting to read Browning, so I may perhaps be pardoned if I have seemed to depart too far from it.

SOLUTIONS OF DIFFERENTIAL EQUATIONS AS FUNCTIONS OF THE CONSTANTS OF INTEGRATION.

BY PROFESSOR GILBERT AMES BLISS.

(Read before the American Mathematical Society December 29, 1917.)

THE purpose of this note is to prove the differentiability of the solutions of a system of differential equations with respect to the constants of integration by a method which seems more natural and simpler than those which have hitherto been published. Incidentally a restatement of the so-called "imbedding theorem" for differential equations is given, a theorem which is frequently applied in the calculus of variations, and which has been useful, and could be made still more so, in many other connections. It is analogous to the fundamental theorem for implicit functions in its statement that a solution of a system of differential equations given in advance is always a member of a continuous family of such solutions.

Let C be an arc

$$(C) \qquad x = u(\tau), \qquad \tau_1 \leqq \tau \leqq \tau_2,$$