Morley experiment. One might suggest that, aside from its interest in physics, there is no more reason to include the theory of relativity here than any other theory of the possible groups of transformations that the differential equations of physics will admit. A larger consideration of such groups would indeed not be out of place. The theory of integral equations would seem to be of a much greater practical value to the working physicist in solving differential equations, yet the space devoted to that is very meager indeed. The promised developments are only a few pages in the section on vibrating membranes, in which the problem is reduced to one of integral equations. Substantially no idea is given of the methods of integral equations, the nearest approach being Green's functions for this case.

The article upon propagation of waves in a gas is preceded by a new section on thermodynamics. As it occupies only four pages, it gives but a few theorems. However, all the article has been re-written, in order to present the matter more clearly from the point of view of the previous edition. The twenty-second and the twenty-third divisions have been combined into a single one. A few minor changes occur.

JAMES BYRNIE SHAW.

Theorie der Elektrizität. Erster Band: *Einführung in die Maxwellsche Theorie der Elektrizität.* Von Dr. A. FÖPPL, vierte, umgearbeitete Auflage herausgegeben von Dr. M. ABRAHAM. Leipzig und Berlin, Teubner, 1912. xviii+ 410 pp. 11 Marks.

THE second edition of this volume was reviewed in this BULLETIN, volume 11, page 383. The third edition has not been accessible to the reviewer, consequently he cannot make a complete comparison between the two. In the present edition the vector applications to mechanics have been cut to a minimum; ponderomotive and fictive tensions have been treated more extensively; the theory of electric waves has been made to include the skin-effect, and some consideration of wireless telegraphy; and the electrodynamics of moving bodies is developed as far as can be done without bringing in the atomistic theories that belong to the second volume,— however, sufficient is given for the application to the induction phenomena of electrotechnics. The definition of the vector

displacement has been modified to read thus:

$$\mathfrak{D} = \epsilon\,\mathfrak{E} \text{ instead of } \mathfrak{D} = \frac{\epsilon}{4\pi}\,\mathfrak{E},$$

which introduces a change in the equations of the displacement current.

The influence of the Maxwell theory is evident from the popularity of this (and other similar treatments) and no doubt will continue to grow.

<div align="right">JAMES BYRNIE SHAW.</div>

NOTES.

THE Colloquium Lectures delivered at the Princeton meeting of the American Mathematical Society, September 15–17, 1909, by Professor GILBERT A. BLISS on "Fundamental Existence Theorems," and Professor EDWARD KASNER on "Differential-Geometric Aspects of Dynamics," have been published by the Society in a volume of about 230 pages. The book is now on sale; price to members of the Society, $1.00, to non-members $1.50. Orders should be addressed to the American Mathematical Society, 501 West 116th Street, New York.

THE April number (volume 14, number 2) of the *Transactions of the American Mathematical Society* contains the following papers: "A study of the circle cross," by J. L. COOLIDGE; "Projective differential geometry of developable surfaces," by W. W. DENTON; "The solutions of non-homogeneous linear difference equations and their asymptotic form," by K. P. WILLIAMS; "An application of finite geometry to the characteristic theory of the odd and even theta functions," by A. B. COBLE; "Conformal transformations on the boundaries of their regions of definition," by W. F. OSGOOD and E. H. TAYLOR.

THE April number (volume 35, number 2) of the *American Journal of Mathematics* contains the following papers. "The reducibility of maps," by G. D. BIRKHOFF; "The highest common factor of a system of polynomials in one variable,"