

Thus the student is led deeply into some parts of the theory of functions and left ignorant of others of comparable importance. The concentration on functions of a single variable is a further disadvantage. Works of this type, valuable as they are, show by their condensations, omissions, and inevitable lack of balanced emphasis, the importance of collections of monographs each devoted to the exposition of a single field.

The author and publishers are to be congratulated on the presentation of a work so useful and attractive. The typography is unusually clear and restful to the eye. As a whole the book is timely and accurate. It is convenient to have in one compact volume demonstrations of so many fundamental propositions with indications of many more in exercises and citations. A brilliant scholarship and much teaching experience have been combined in an interesting and reliable introduction to a large part of the theory of functions.

E. W. CHITTENDEN

La Relativité: 1. *Cinématique de la Relativité*. By E. Bauer. 2. *La Dynamique Relativiste et l'Inertie de l'Énergie*. By F. Perrin. 3. *Conséquences de la Relativité dans le Développement de la Mécanique Ondulatoire*. By L. de Broglie. 4. *La Théorie Einsteinienne de la Gravitation; les Vérifications Expérimentales*. By G. Darmois. 5. *Le Parallélisme Absolu et la Théorie Unitaire du Champ*. By E. Cartan. 6. *La Relativité; Conclusion Generale*. By P. Langevin. Paris, Hermann, 1932.

This is a series of six monographs, issued separately as parts of the series Actualités Scientifiques et Industrielles, and forming a symposium on Relativity under the auspices of the Centre International de Synthèse and directed by P. Langevin. The treatment is quite elementary and in general non-mathematical. M. Bauer's part deduces in some 23 pages the Lorentz transformation and its elementary consequences. The deduction is unsatisfactory because it is assumed, p. 18, that because when $x^2 + y^2 + z^2 - c^2t^2 = 0$, then $x'^2 + y'^2 + z'^2 - c^2t'^2 = 0$, it follows that $x^2 + y^2 + z^2 - c^2t^2 = x'^2 + y'^2 + z'^2 - c^2t'^2$. M. Perrin's part (19 pages) gives the elementary dynamical consequences of the Lorentz formulas (transverse and longitudinal mass, variation of mass with velocity, etc.). In the third part (14 pages) L. de Broglie shows the connection between the Lorentz formulas and the fundamental quantum relation $E = h\nu$, and how the relativity theory resolves the conflict between the wave and corpuscular theories of light (pressure on a reflecting mirror, relation between Fermat's principle and the principle of Maupertuis). Part 4 (30 pages), by G. Darmois, discusses Schwarzschild's centro-symmetric solution of the equations of general relativity in free space and its application to the classical verifications of the theory (secular advance of perihelion of the planets, deflection of a ray of light passing near the sun, spectrum shift to the red). Part 5, by E. Cartan, is to the reviewer the most interesting of all. In less than twenty pages, and without mathematical symbols, is developed a readable and thought provoking account of the theory of distant parallelism and of the significance of torsion as opposed to curvature of space. In part 6, Langevin gives, in some 15 pages, a general summary.

Taken as a whole the set of six monographs forms a useful résumé of the elementary parts of relativity theory.

F. D. MURNAGHAN