

*Grundzüge einer allgemeinen Theorie der linearen Integralgleichungen.* Von DAVID HILBERT. Leipzig und Berlin, Teubner, 1912. xxiv + 282 pp.

THIS book appears as volume 3 of a new Teubner collection entitled *Fortschritte der mathematischen Wissenschaften in Monographien*, under the general editorship of Professor Otto Blumenthal, and consists of a reimpression, with some insignificant changes, of the six papers on integral equations published by Hilbert in the *Göttinger Nachrichten* from 1904 to 1910, with an additional chapter on the foundations of the kinetic theory of gases (also published in *Mathematische Annalen*, volume 72). These various papers not having been remoulded into an organic whole, the presentation of the theory is not a systematic one, but this defect is largely offset by an elaborate table of contents arranged by subjects and stating the main theorems in extenso. Since Hilbert's papers have already become classical and are familiar to all students of the subject, an enumeration of the section headings will suffice: I. General theory of linear integral equations; II. Application of the theory to linear differential equations; III. Application of the theory to problems in the theory of functions; IV. Theory of functions of an infinite number of variables; V. A new exposition and extension of the theory of integral equations, VI. Application of the theory to various problems in analysis, geometry, and theory of gases.

T. H. GRONWALL.

*Gabriel Lippmann.* Par E. LEBON. Paris, Gauthier-Villars, 1911. viii+70 pp.

THE series *Savants du Jour* by Lebon has made known to mathematicians the world over, and let us hope to a general public in France, the portrait and the details of the life and work and writings of Poincaré, Darboux, Picard, and Appell. The attention is now turned to the physicist Lippmann. To one at all familiar with the rigorous program of studies and examinations through which the young French savant passes it is particularly interesting to read how Lippmann by too great an enthusiasm for extra-curriculum studies failed to pass the aggregation, took his doctorate in Germany, returned for his doctorate at the Sorbonne, and then marched steadily on to the leading position in French physics. In regard to the