VALLÉE POUSSIN'S COURS D'ANALYSE.

Cours d'Analyse Infinitésimale. Par CH.-J. DE LA VALLÉE POUSSIN. Tome 1, troisième édition considérablement remaniée, et tome 2 remaniée. Louvain, Dieudonné, 1914. 9 + 452 pp. and 9 + 464 pp.

IN the two four hundred and fifty page volumes of this Cours the author has in mind two classes of readers. There are, first, those who desire to acquire an accurate working knowledge of the calculus stripped as far as possible of those subtilities which are repellant and useless to the engineer and physicist. This part of the book is printed in large type and follows in the choice of topics the general outline of the traditional French Cours, except that the space devoted to the treatment of Fourier's series is somewhat greater and con-vergence proofs are given. The handling throughout is clear, elegant, and concise; the various topics are illustrated by numerous carefully chosen examples selected with rare peda-gogic skill to develop a real understanding of the text.

The rest of the Cours, printed in smaller type, is addressed to a different class of readers, those who wish to get at the fundamental principles of modern analysis. These last edi-tions show that both volumes have undergone considerable alterations and improvements, proofs have been recast and expanded and the books, though excellent in the first edition, have been greatly improved.

§§ 8–10 deal with sets in general, and it would be hard to find anywhere so lucid and compact a presentation of the fundamental ideas involved. § 10 is concerned with the Borel-Lebesgue theory of measure and establishes the important results of Borel and Lebesgue, the methods of proof being essentially those later used by Vitali in his paper "Sui gruppi di punti" in volume 28 of the *Rendiconti del Circolo Mate-matico di Palermo*.

§ 12 deals with measurable functions and it is shown that practically all convergent processes applied to measurable functions lead to measurable functions.

§ 13 is concerned with functions of limited variation, destined later to play such an important rôle in the theory of Lebesgue integrals, and ends with a section on Vitali's *absolutely* con-