*Moderna teoria delle funzioni di variabile reale.* By G. Vitali and
G. Sansone. (Monografie di matematica applicata per cura del
Consiglio Nazionale delle Ricerche.) 2d ed., Bologna, Zanichelli,
1943–1946. Vol. 1, 9+194 pp., vol. 2, 7+511 pp.

The first edition of this excellent treatise was reviewed in vol. 43
(1936) p. 15 and vol. 45 (1939) p. 218 of this BULLETIN. The first
volume has not been changed much in the revision; a discussion of
the theorems of Egoroff-Severini and Lusin in chapter III seems to be
the most important addition. On the other hand, the second volume
has grown by more than 200 pages. A completely new chapter on
approximation and interpolation has been added. About 80 pages are
devoted to the theorem of Weierstrass (the Landau-de la Vallée-
Poussin approach for the rational case and that of Dunham Jackson
for the trigonometric one), best order of approximation, Chebychev
polynomials, the interpolation polynomials of Lagrange and Hermite,
Bernstein polynomials, and so on.

There are other important additions. Thus in chapter I a discussion
of $L_p$ spaces is added. In chapter II the theory of Fourier series has
been enlarged somewhat, the main addition being devoted to $(C, \alpha)$
summability. In chapter III the formula of Mehler has been added
as well as a discussion of the zeros of Legendre polynomials. The
major addition to this chapter, however, is a discussion of the func-
tions on the sphere as well as $(C, \alpha)$ and Poisson summability of the
series of Laplace and of Legendre. Chapter IV on Hermite and La-
guerre polynomials is practically unchanged. Finally, in the last chap-
ter on Stieltjes integrals the discussion of characteristic functions
( =Fourier-Stieltjes transforms of distribution functions) has been
completed by the addition of the Bochner-P. Lévy inversion formula
and some convergence theorems. The additions have done much to
enhance the value of the treatise which has become a convenient and
reliable handbook in classical analysis. The book can be strongly
recommended. It is to be hoped for that the misspelling of the name of
Walsh will be corrected in the third edition.

EINAR HILLE

*Cours d'analyse mathématique.* By G. Valiron. Paris, Masson, 1942–
1945. Vol. 1, 2+522 pp., vol. 2, 2+605 pp.

The two volumes under review constitute a comprehensive account
of the following topics: the differential and integral calculus, the gen-
eral theory of analytic functions of a complex variable, algebraic func-
tions and Abelian integrals, a brief introduction to analytic functions
of several variables, the theory of ordinary differential equations in