The Lebesgue integral. By J. C. Burkill. Cambridge University Press, 1951. 8+87 pp. $2.50.

This tract is an exposition of classical Lebesgue theory on the real line, written for "those who have no wish to plumb the depths of the theory of real functions." The treatment throughout is fairly standard. The chapters are as follows: I. Sets of points; II. Measure (after de la Vallée Poussin); III. The Lebesgue integral (using ordinate sets); IV. Differentiation and integration (based on the Vitali covering theorem); V. Further properties of the integral (change of variable, the Fubini theorem, and the L^p-spaces); VI. The Lesbesgue-Stieltjes integral.

The limitations which the author imposes on the scope of his treatment are severe. For example, general measure theory is not even mentioned, which automatically excludes such timely topics as the Radon-Nikodým theorem and the theory of Cartesian product measures. Nor does the concept of set function occur, even for the real line; monotone functions, functions of bounded variation, and absolutely continuous functions are treated as point functions only. It follows that the book will be of little direct use to students interested in such fields of modern analysis as the general theory of Hilbert space, integration on locally compact groups and its consequences, or the fundamentals of probability theory, to name a few.

Of course, it can always be argued that the study of general measure and integration theory can with benefit be preceded by the study of a short treatment of the classical case, such as is presented here. And the present tract is a very clear and concise exposition of those topics with which it is concerned.

L. H. LOOMIS

Measure theory. By P. R. Halmos. New York, Van Nostrand, 1950. 11+304 pp. $5.90.

In this book Professor Halmos presents an account of the modern theory of measure and integration in the generality required for the study of measure in groups. Thus finiteness conditions are imposed only where necessary, and algebraic and topological aspects are appropriately stressed. Although written primarily for the student, the many novel ideas in the book and its store of interesting examples and counter examples have already made it an indispensable reference for the specialist. The clarity of expression and the sprightly style which are characteristic of the author make the exposition a pleasure to follow.