BOOK REVIEWS

Intégration (Chap. I–IV). By N. Bourbaki. (Actualités Scientifiques et Industrielles, no. 1175.) Paris, Hermann, 1952. 2+237+5 pp. 2500 fr.

The volume under review contains the first four chapters of the sixth book of the first part of the series that the authors started publishing in 1939. One difficulty in the way of a complete critical evaluation of the volume is that at several points the proofs are made to depend on the results of the fifth book (entitled, according to the advertisements, *Espaces vectoriels topologiques*), and that, at the time this is being written, none of the chapters of the fifth book has appeared yet. Another such chronological difficulty is that the volume is only a half (or less) of the entire projected book; even the world's greatest art expert might hestitate to pronounce judgment on Picasso's latest if he were shown only the bottom half of it. Laboring under these two handicaps, I shall do the best I can to give the reader of this review an idea of what he may expect from Bourbaki's treatment of integration.

Mathematics books may be roughly classified as either textbooks or monographs. There is, of course, no clear line between the two classes, but certain tendencies are generally visible. The author of a textbook is mindful of the troubles of beginners; he tries to provide a systematic introduction to his subject; he is prepared to include a liberal supply of exercises; and, faced with an upper bound on the number of pages in his book, he is willing to barter completeness for clarity. The author of a monograph, on the other hand, addresses himself to the expert; he starts where his predecessors left off; he is not bound to mention even the important applications of the theory; and, faced with an upper bound on the number of pages in his book, he will prefer condensed proofs to the charge of bibliographic highhandedness. The famous *Ergebnisse* series, for example, consists of monographs; the volume under review is a textbook.

The expert in modern integration theory will certainly not find anything to startle him here, except possibly the order of the ideas and some of the terminology used to describe them. Hölder's and Minkowski's inequalities, vector lattices, measures on compact and locally compact spaces, vector-valued integrals, product spaces, outer measure, functions defined almost everywhere, the L^p spaces, approximation by step functions, measurable functions and measurable sets —this is a representative selection of the items listed in the table of