

Bochner-Weil-Raikov theorem on positive functionals, and a Plancherel theorem (after Godement). Thus the later proofs of the more familiar form of these theorems for group algebras become spectacularly abrupt.

Haar measure (with a neat treatment of quotient measures) and the Banach algebra of L^1 under convolution over a locally compact group having been disposed of in Chapter VI, the next chapter gives that satisfactory treatment of the theory of characters for the abelian case which the concept of maximal ideals makes possible. Pontrjagin's duality theorem itself is rather ignominiously embedded in a section on miscellaneous theorems, and provides an occasion for remarking that the important structural considerations on which this duality theorem was based in pre-normed ring days are not (as contrasted with A. Weil's book) here presented.

Compact groups and almost periodic functions are next treated by means of Ambrose's H^* -algebras, which were (of course) set up in an earlier chapter. The work closes with a stimulating chapter on further developments. A paper of H. J. Reiter, whose place of publication was indefinite at the time, is in the *Trans. Amer. Math. Soc.* vol. 73 (1952) pp. 401-427 and further references of interest are in R. Godement's paper, pp. 496-556 in the same volume.

The author is certainly to be thanked for his efforts in producing, in this field, a text which will take its place next to Pontrjagin's and A. Weil's in the literature of locally compact groups. Aesthetic considerations certainly played a large part in shaping the exposition. It is to be hoped that the book will be widely used as a text for graduate courses. I would guess that there was material for about 75 lectures of the usual sort. The instructor will have to consider each lecture carefully in advance, think about adding to the index (an index of symbols would help), and provide alternative motivations with detailed examples. The student will understand that this monograph is not a treatise on the fields partly covered by the chapters on prerequisites (Banach algebras, operator algebras, topological groups, etc.). Nevertheless, after careful study of this book, he should be able to decide whether he shares the ability of some, and the enthusiasm of many, for research in these fields.

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Conformal representation. By C. Carathéodory. 2d ed. Cambridge University Press, 1952. 10+115 pp. \$2.50.

Except for the addition of a chapter on the uniformization theorem, this is an exact reprint of the original 1931 edition (which, by an oversight, was never reviewed in this Bulletin).

It is a tribute to both the author's powers as an expositor and to his sure feeling for what is important and what is not, that despite the very considerable progress made in the theory of conformal mapping in the intervening years the book has retained its old freshness. There is much that could be added to the book, but there is hardly anything that should have been omitted. The style is concise without being obscure—a combination not often found in present-day mathematical writing—and the presentation is rigorous without being tedious or overly symbol-laden. In addition to still being a valuable introduction to the subject, the book is a model of mathematical exposition.

It goes without saying that the book is not an adequate introduction to the present state of the theory of conformal mapping. For example, the mapping of multiply-connected domains has been left out altogether (except in the doubly-connected case). Curiously enough, no mention is made even of what was known in this field at the time the first edition was written. The author must have shared the view—rather widely held at that time—that since the universal covering surfaces are simply-connected, the study of simply-connected domains would eventually take care of the general case.

The first two chapters contain a detailed discussion of the linear transformation and of the Klein-Poincaré non-Euclidean geometry based on the group of linear transformations of a circle onto itself. Chapter III considers some elementary mappings, and Chapter IV discusses Schwarz' lemma and some of its ramifications. Chapter V deals with the theory of normal families and includes the by now classical proof of the Riemann mapping theorem based on an extremal property of the mapping function. Chapter VI is devoted to the investigation of the boundary behavior of conformal mappings, while Chapter VII studies the mapping of closed surfaces. Chapter VIII, the only one not contained in the first edition of the book, reproduces the elegant and astonishingly short proof of the general uniformization theorem given by van der Waerden in 1941.

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Ideal theory. By D. G. Northcott. Cambridge University Press, 1953. 8+111 pp. 12s. 6d.

This is an excellent exposition of the basic facts about Noetherian rings, that is, commutative rings with unit element and ascending chain condition for ideals. Starting from scratch (no knowledge of modern algebra is assumed) the author proceeds clearly and efficiently up to the deeper parts of ideal theory that are used today in