

PREFACE

SINCE the discovery of group characters by Frobenius at the end of the last century, the development of the theory has been so spectacular, and the theory has shown such powerful contacts with other branches of mathematics, both pure and applied, that the inadequacy of its treatment by text-books is rather surprising. Indeed, until the publication last year of Murnaghan's treatise, *The Theory of Group Representations*, there was no book which devoted itself especially to the theory, and even Murnaghan's work was written specifically with a view to its applications to quantum theory and nuclear physics.

It has been my purpose in writing this book to give a simple and self-contained exposition of the theory in relation to both finite and continuous groups, and to develop some of its contacts with other branches of pure mathematics, such as invariant theory, group theory, and the theory of symmetric functions. There are three introductory chapters on matrices, algebras, and groups, so that no specialized knowledge is required of the reader beyond that obtained in an ordinary degree course in mathematics. Rather than to attempt any exhaustive treatment, it has been my aim to develop the nucleus of a theory which will bring to notice new problems to be solved.

The bibliography gives most of the original memoirs which have gone towards the development of the theory, together with text-books and authoritative references to relevant theories. I must express my debt to Murnaghan's book (no. 9 in the bibliography) and to two books by Weyl (nos. 13 and 14) in compiling this bibliography. Murnaghan's book also suggested certain additions to the last chapter.

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