

extent erroneous. So far, however, as the form of the development may be taken as implying an opinion that Lewis's theory of strict implication is from the point of view of intuitive justification better formulated as a syntax than as a logic, the reviewer finds himself in complete agreement with the author.

ALONZO CHURCH

*Introduction to the Theory of Groups of Finite Order.* By Robert D. Carmichael. Boston, Ginn and Co., 1937. 16+447 pp.

The fundamental place occupied by the group concept in modern mathematics and the discovery of new and important applications of the theory of groups have made it necessary for every serious student of mathematics to acquire a working knowledge of this subject. Professor Carmichael's book will find a large audience, as it is addressed to the beginner, not to specialists, and makes no claim to including the most recent discoveries in group theory. The exposition is excellent throughout. The book includes a large number of exercises of varying degrees of difficulty which will enable the learner to cultivate the subject as assiduously as he desires.

The first part of the book treats those topics which are indispensable to all works on the theory of groups: abstract groups, abelian groups, prime-power groups, permutation groups, linear groups in the field of complex numbers, and the theory of group characters. A full discussion of finite fields is followed by a treatment of linear groups in a finite field with emphasis on certain multiply transitive permutation groups whose existence is established most readily by means of linear groups. The author calls attention to certain doubly transitive groups overlooked by Burnside.

Geometers will be particularly interested in the chapters on finite geometries which contain an exposition, from the group standpoint, of the researches of Veblen and Bussey. The chapter on algebras of doubly transitive groups includes Dickson's researches on finite algebras and will appeal to mathematicians interested in linear algebras. The final chapter is devoted to tactical configurations. The latter part of the book is particularly valuable, as it includes material widely scattered throughout the literature and here collected and systematized for the first time.

LOUIS WEISNER

*Höhere Algebra. II. Gleichungen höheren Grades.* By Helmut Hasse. Zweite verbesserte Auflage. (Sammlung Göschen, vol. 932.) Berlin, de Gruyter, 1937. 158 pp.

The new edition is in the main the same as the first edition, giving the principal results of the Galois equation theory. The results are, however, derived under somewhat more general conditions, since the author has dropped the former limitation to perfect fields and considers separable extensions in general. There are also various minor additions and improvements. A short account of the theory of finite fields is added.

OYSTEIN ORE

*An Introduction to Projective Geometry.* By C. W. O'Hara and D. R. Ward. Oxford, Clarendon Press, 1937. 298 pp.

The point of view of the authors is best stated in the preface: "It cannot with truth be said that the book has been written to 'supply a long-felt want.' There seems, unfortunately, to be very little demand for the teaching of Projective Geometry in