tainly not in so general a form, before the work of the author. For this reason it is not a book that can be skimmed lightly, but rather it must be studied to be followed. The organization, however, is good and the proofs clearly written, their length in many instances being due to the extremely weak assumptions made. It must certainly be counted an important addition to the literature and will deserve the careful consideration of mathematicians interested in the geometry of Riemannian and, particularly, Finsler spaces.

WILLIAM M. BOOTHBY

Structure of a group and the structure of its lattice of subgroups. By Michio Suzuki. (Ergebnisse der Mathematik und ihrer Grenzgebiete. Neue Folge. Heft 10.) Berlin, Springer, 1956. 6+96 pp. DM 16.50.

The lattice of subgroups of a given group has been studied for a long time, even before lattice theory was recognized or named. The converse problem—what can be told about a group from knowledge of its lattice of subgroups—was first studied by Ada Rottländer in 1928, followed in the next few years by R. Baer and O. Ore. In the past fifteen years much more has been learned, through the efforts of a number of mathematicians including the author. The present monograph is the first collected presentation of this work. The author thoroughly surveys the known facts, rounding them out with additional results not previously published. Substantial familiarity with groups and lattices is assumed; thereafter the presentation is self-contained except for the omission of proofs or details (for which references are given) in the advanced stages of some developments.

Chapter I discusses groups which have special kinds of lattices of subgroups, such as distributive, modular, etc. In this respect, knowledge seems relatively weak in the case of complemented lattices. Chapter II considers the case of two groups G and H whose lattices of subgroups are isomorphic; then the author calls H a projectivity of G (more commonly G and H have been called lattice-isomorphic or structurally-isomorphic). This situation has been essentially completely characterized for finite groups, and largely so in the infinite case. One might add to the bibliography the recent paper of B. Jónsson [Mathematica Scandinavica, vol. 1 (1953) pp. 193–206]. Chapter III presents analogous results for lattice-homomorphic groups; for most of these results it is required that the homomorphism be complete (i.e., hold even for infinite joins and meets). Chapter IV considers cases where the lattices of subgroups are dually-isomorphic.

It is impressive to see how much is known about these matters as