BOOK REVIEWS

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In this section selected books by Yugoslav authors are reviewed

Stojan M. Bogdanović, Miroslav D. Ćirić: *Semigroups* (Serbian, English preface and contents), Prosveta, Niš, 1993, 4 + 287 pp.

Theory of semigroups is a modern field of Mathematics. The beginning results became as a generalization of some other mathematical theories like Group theory and Theory of rings. A number of new and intensive research groups have been formed at several places, mainly in the last few decades. The book under review satisfies real demands and will certainly be eagerly welcomed.

The central concepts of this book are the Theory of semilattice decompositions, the Theory of decompositions of semigroups with zero and finally band compositions of semigroups.

Preliminaries and elementary structural aspects of Theory of semigroups are presented in Chapter 1. In Chapter 2 are given, mainly general, properties of π-regular and completely π-regular semigroups. Various decompositions of these semigroups will be systematically treated through this book. The subject of Chapter 3 is the structure of (0-) Archimedean semigroups. Chapter 4 is devoted to the semigroups with completely simple kernel. In Chapter 5 is considered the general theory of semilattice decompositions of semigroups and also various types of these decompositions, which is one of the main questions treated in this book. A part of the theory of semilattice decompositions was exposed in the monograph of M. Petrich from 1973. Here are included new results that appeared in the meantime, including also new methods, which cover the former results from this area. This topic is naturally prolonged throughout the next two chapters that contain results on semilattice decompositions of (completely) π-regular semigroups, nil-extensions of unions of groups (especially retractive ones) and identities that induce such decompositions. Chapter 8 treats the greatest decompositions of a semigroup with zero into a right sum and an orthogonal sum of semigroups. Among other things, a nice theorem on representation of a complete atomic Boolean algebra by 0-consistent ideals is given. Chapter 9 considers band compositions of semigroups determined by systems of homomorphisms, predominantly their connections with subdirect products, and especially with spined products. There is a number of exercises at the end of each paragraph. The book contains a large list of references.

This new monograph in algebraic theory of semigroups is undoubtedly an important contribution to the literature on the subject. It contains a wealth of promising ideas, efficient global methods as well as plenty of inspiration for further

work. I think the book will have a strong influence on the further development of
the whole of theory of semigroups.

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