Some Properties Related to Compactness, by J. van der Slot. Mathematical Centre Tracts v. 19, Mathematisch Centrum Amsterdam 1968. 56 pages. Paperback.

This booklet contains a thesis written at the Mathematical Centre in Amsterdam. It deals with various generalizations of compactness; in particular the author introduces the concepts of basiscompactness and $\mathfrak{m}$-ultracompactness ($\mathfrak{m}$ being an infinite cardinal). A space is called basiscompact if there exists an open base $\mathfrak{U}$ such that for each centered family $\mathfrak{U}_1 \subset \mathfrak{U}$ the collection $Cl\mathfrak{U}_1$ has non-empty intersection. Basiscompactness is stronger than subcompactness but weaker than cocompactness (two generalisations of compactness previously introduced by the Amsterdam school). A space X is called $\mathfrak{m}$-ultracompact if it has a subbase $\mathfrak{S}$ for the closed sets of X such that each ultrafilter $\mathfrak{F}$ in X for which $\mathfrak{F} \cap \mathfrak{S}$ satisfies the $\mathfrak{m}$-intersection property (i.e. each subcollection of cardinal $< \mathfrak{m}$ has non-empty intersection) is convergent. $\aleph_1$-ultracompactness coincides with realcompactness in countably compact normal spaces.

The results about these and related properties are too numerous to list; the main ones are concerned with the study of heredity and productiveness. The final chapter describes a realcompactification of a T_1-space with a suitable subbase analogous to a Hausdorff compactification found previously by J. M. Aarts.

The thesis is well and clearly written and understandable to anybody with a good background in general topology. But because of its specialized content it will only appeal to a limited readership.

Helga Schirmer, Carleton University

Problems and solutions in ordinary differential equations, by F. Brauer and J. A. Nohel. W. A. Benjamin, Inc., New York, 1968.

This book is designed as a companion to the same authors' text "Ordinary differential equations: a first course" (cf. this Bulletin - Volume 11 No. 2). It would certainly be quite useful to students using that text. The authors assert however that the book is "essentially self-contained and will be useful as an accompaniment to books and courses covering the same topics". In the reviewer's opinion, this claim is not justified - there are too many references to the text itself. For example (p.155): "We now apply Gronwall's inequality ... Theorem 6.2, p.252 [of the text] ... " A check of twelve other elementary texts in the subject on the reviewer's shelves failed to reveal a single reference to Gronwall's inequality.

Colin Clark, University of British Columbia.

Systems of Singular Integral Equations, by N. P. Vekua. Translated by A. G. Gibbs and G. M. Simmons. P. Noordhoff, Groningen, 1967, 216 pages.

This book is a translation of the Russian edition which appeared in 1950. It is a carefully written monograph with an excellent translation that should be attractive to the mathematician interested in the theory of analytic functions and the equations of mathematical physics.

The author studies Hilbert boundary value problems and systems of singular integral equations with Cauchy type kernel, in the complex plane. In the first two chapters the homogeneous and inhomogeneous Hilbert problem for several unknown functions, including the case of discontinuous coefficients is solved. In each case the functions satisfy the Holder condition. A theory of systems of singular integral is presented and Noether type theorems are proved. The problem of regularization and equivalence are discussed and the notion of index introduced. Typical theorems are those asserting that subject to suitable conditions a singular integral is equivalent to an essentially regular Fredholm integral equation.

In Chapter 3 the author gives applications of the preceding chapters. Some of the problems considered are the Riemann problem,

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