few decades. It had an impact on the trend of research and is still influencing it. In looking through the book now one realizes how little one would like to change the existing text, though, not unnaturally, one would like to see the book expanded by the inclusion of new material. Much of this material is already in the book in the form "Miscellaneous Theorems and Examples" at the ends of the chapters, where many results are stated without proofs, or merely with indications of proofs. Today, when the main results of the theory are comparatively familiar, due, to a great extent, to the book itself, a "promotion" of a part of the small type material to a more prominent place and an elaboration of this material would seem desirable. Also, the inclusion of results pertaining to the theory of linear operations would be useful, if only in connection with the work of M. Riesz and Thorin. We now realize their importance, and today, due to the simplifications of the proofs and the further development of the theory of linear operations, such results are much more within the reach of the beginner than they were twenty years ago.

A. ZYGMUND

Theory of elasticity and plasticity. By H. M. Westergaard. (Harvard Monographs in Applied Science, no. 3.) New York, Wiley, 1952. 14+176 pp. $5.00.

It was the intention of the author to write a textbook on elasticity and plasticity, containing, in particular, a unified account of his own researches and of the aspects of the subject to which they pertain. The introduction indicates that the present work corresponds to the first half of the project, and there are passages which probably would have been revised if even this part had not been completed under the pressure of time and illness. The author died in 1950.

The work as it stands refers almost exclusively to elasticity and may be divided roughly into three parts: scope and history, fundamental concepts, inverse and semi-inverse solutions obtained by stress functions and strain functions.

The author's historical remarks, both in his second chapter and in the numerous careful annotations throughout the rest of the work, are drawn almost entirely from his own experience in the literature. They constitute a valuable supplement to what is generally known, particularly since they refer to work whose date, or at least whose main interest, is subsequent to the definitive form of Love's treatise (1906). Many of the authors whose work is discussed are still active (Prandtl, v. Kármán, v. Mises, Mindlin, Nadai, and younger writers).

The last two chapters contain the only systematic exposition in English of the use of stress and strain potentials in elasticity theory. A surprising omission is the work of Neuber (Zeitschrift für angewandte Mathematik und Mechanik vol. 14 (1934) pp. 203–212); there is no reference to the recent Russian inundation. The virtue of Westergaard's presentation lies in his showing the reader the value of general solutions in terms of arbitrary functions and in his ability to adjust these to yield special cases of real interest.

There are numerous interesting exercises, stated mostly without answer. Some will give the student a surprise if he works them (e.g. Problem 6 on p. 114).

The reader accustomed to other engineering texts will find this one rather different. It is free from "approximations," yet many of the pages contain compact, individual, and interesting remarks on practical applications (e.g. pp. 43–45, 98–99). An example of the author's simple and personal manner of relating theory to experience, even in old material, is as follows (p. 80): "The constant μ is called Poisson's ratio; Poisson, in his extensive paper of 1829, presented arguments, later found untenable, that its value should be $\frac{1}{4}$. Good approximate values are: for steel, 0.3; for concrete, 0.2; for cork, close to zero, which is important in the operation of pressing a cork into a bottle; and for rubber, slightly less than 0.5, which makes it desirable to insert a rubber stopper into a bottle by turning it rather than by pressing."

To one accustomed to working in the mathematical theory for its own sake, this expression of a distinguished research engineer's belief in the mathematical method and quiet confidence in the exact solutions of the theory of elasticity will be welcome reassurance, especially at a time when traditional mechanics is besieged on opposite sides by computing machines and existence theorems. Every student of elasticity can read this book easily and with both profit and pleasure.

C. TRUESDELL

Séries adhérentes. Régularisation des suites. Applications. By S. Mandelbrojt. Paris, Gauthier-Villars, 1952. 14+279 pp. 4000 fr.

This book is an account of researches, mainly due to the author, on various problems which may seem unconnected at first sight. Their collection in one book is justified by the fact that all these questions can be treated by two main tools, the regularisation of sequences and Mandelbrojt's "fundamental inequality." This inequality