depends on ideas developed between pages 170, 188. The book is an important contribution to mathematical literature. At every turn one sees the care and ingenuity which the author has used to make his proofs rigorous and readable. The book is intended for the conscientious student, and it will repay him well for the hours that he may spend with it.

A. C. SCHAEFFER

Foundations of the nonlinear theory of elasticity. By V. V. Novozhilov. Trans. from the first (1948) Russian ed. by F. Bagemihl, H. Komm, and W. Seidel. Rochester, Graylock, 1953. 6+233 pp. $4.00.

Students of mechanics will be grateful to the translators and the publishers for making available the second of the three[1] existing monographs on the general theory of elasticity—the more so, since the Russian original is in this country at least a very rare book.

The translation is unusually good English (except for "compatability") and the translators have taken unusual care that the exposition of this elaborate subject shall make sense, although they are not always familiar with the terms used in mechanics (e.g. on p. 58 they use "components of a vortex" for "components of the curl"). Despite its being planographed, and thus repulsive to the eye, the text is readable.

The author's approach is straightforward, honest, and vigorous. There is little or no nationalism, rhetoric, or pedagogery. The author gives every evidence of his earnest competence and his respect for a difficult and important group of problems. The book is not scholarly, however; most of the some ninety items in the bibliography are not cited in the text, part of which presents material first published in important papers not listed in the bibliography. It is quite possible that many of the results in this book are rediscoveries by the author himself.

This is a serious work, deserving detailed notice. The author's preface is dated 1947, and the book is on the whole a careful, accurate, and reliable exposition of some of the mechanical aspects of the classical nonlinear theory of elasticity as it stood at that date. It was in 1948 that the numerous publications of Rivlin, which have enlivened the subject and changed the whole view of it, began to appear.[2] Thus

[1] The other two are *Théorie des corps déformables* by E. and F. Cosserat, Paris, 1909, and *Finite deformation of an elastic solid* by F. D. Murnaghan, New York, 1952. The latter was reviewed in Bull. Amer. Math. Soc. vol. 58 (1952) pp. 577–579.

[2] These are briefly summarized in Chap. IV of my paper, *The mechanical foundations of elasticity and fluid mechanics*, Journal of Rational Mechanics and Analysis vol. 1 (1952) pp. 125–300; corrections and additions, vol. 2 (1953) pp. 593–616.