those planning a graduate course in elasticity, especially one conducted as a seminar; and, last, but not least, graduate students in quest of a research problem.

A. C. Smith, University of Windsor

Quantum statistical mechanics, edited by P. H. E. Meijer. Gordon and Breach, 150 Fifth Avenue, New York 10011, 1967. ix + 172 pages. Hardbound: U.S. $9.75 (prepaid U.S. $8.40); Paperbound: U.S. $4.95 (prepaid U.S. $3.96).

This book contains the lecture notes of a summer school on quantum statistical mechanics at the Catholic University of America. Unfortunately there has been a considerable delay in the appearance of this book (the date of the lecture is not given, but seems to be 1964). The course consisted of four parts.

P. H. E. Meijer gives an introduction to the density matrix, the Wigner distribution function, second quantization and the diagrammatic method (40 pages). (In the reviewer's opinion the treatment of the density matrix is inferior to that given in the textbooks of Messiah and Dirac, for example.) T. Tanaka reviews the Green's function method and the perturbation theory approach to the electron gas (64 pages). T. Morita gives a detailed discussion of the diagrammatic method (31 pages). The most interesting material is contained in the lectures by R. W. Zwanzig which are concerned with a careful discussion of master equations. A new derivation (now published, see Physica 30 (1964) 1109-1123) of a generalized master equation is given (33 pages).

E. J. Woods, Queen's University

Theoretical elasticity, by A. E. Green and W. Zerna (Second edition). Clarendon Press, Oxford, 1968. xv + 457 pages.

Since its first publication in 1954, Green and Zerna's treatise has become firmly established as an authoritative treatment of certain areas of the theory of elasticity, a subject which as a whole is now too vast to be adequately treated at the research level in a single volume. The authors have concentrated their development on three main branches of elasticity theory which are of current interest: finite displacements, complex variable techniques for plane problems, and shell theory.

The general arrangement of the second edition remains unaltered. Chapter 1 contains material on tensor analysis and a very brief discussion of Cauchy singular integrals. Chapter 2 develops the general equations of elasticity theory and Chapter 3 derives the solution of certain finite strain problems concerning circular cylinders and tubes. Chapter 4 discusses small displacements superimposed on finite deformations.

Infinitesimal strain is considered in Chapter 5 and the next four chapters are concerned with essentially two dimensional problems for both isotropic and anisotropic materials. Included is an account of Reissner's theory of transverse flexure, a most welcome inclusion. Extensive use is made of the representation of solutions in terms of pairs of complex potentials. This process enables biharmonic type boundary problems to be reformulated as Hilbert problems, the solution of which can be tackled by means of Cauchy singular integrals, a technique which is of wider application and which, in this reviewer's opinion,