Soil Testing for Engineers. T. William Lambe. New York: Wiley; London: Chapman & Hall, 1951. 165 pp. $5.00.

Fourteen soil tests in common usage in soil mechanics laboratories are described in detail and discussed in this book. The text is meant primarily as a guide for student laboratories, but it will also be useful as a reference source to engineers and research workers concerned with the mechanical properties of soils and soil materials. The organization of the material, its pleasing reproduction, the excellent illustrations, and the appendices containing useful data and derivations of all formulas used in the main text are certainly a credit to the author. Unfortunate is the incidence of several undesirable colloquialisms and even grammatical lapses, which should not be found in a scientific book.

Each test is introduced with a short indication of its meaning and connection to field practices and behavior of soil *in situ*. These introductions are the least satisfying part of the book, which is probably more a matter of lack of knowledge about the mechanical behavior of soils than anything else. The reviewer, as a soil physicist, regrets that the author has not drawn on the vast source of information accumulated in the field of soil physics. This is particularly true for the sections on movement of water. Discussion of the energy concept of soil water, the idea of capillary potential, and a more detailed discussion of Darcy's law would have added to the value of this material. As a study text for students the book should be used with discretion and should be supplemented with discussion of other findings and theories than referred to in the text.

Missing, in a book with the purpose of teaching students how to measure soil properties and to distinguish on the basis thereof between different soils, is a discussion of the statistical treatment of the data. The question of adequate sampling is briefly mentioned but not with sufficient clarity. Anyone dealing with mixed populations (such as soils) should be familiarized with the fundamentals of the distinction between arbitrary classifications and with the essentials of estimating the proper number of samples and determinations on each sample. At least reference should be made to texts that consider the problem of interpretation of data containing unaccounted-for variation.

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Isoperimetric Inequalities in Mathematical Physics. G. Pólya and G. Szegö. Princeton, N. J.: Princeton Univ. Press, 1951. 279 pp. $3.00.

The classical "isoperimetric inequality" states that for any closed plane curve with given perimeter the area is not greater than the area of the circle with the same perimeter. There are many other interesting inequalities of a similar type concerning geometrical or physical quantities that depend on shape and size of curves or solids. Such inequalities are the subject of this book. The general aim is the possibility of estimating certain physical quantities, in which physicists or engineers are interested, by means of geometrical or other easily accessible quantities. Much work has been done in this direction during the past few decades and, in particular, the authors themselves had already made valuable contributions. In the present book a careful and systematic discussion and a well-organized presentation of these questions are given.

The first chapter (41 pp.) gives a lucid and readable summary of the definitions, methods, and results. Many of the results are given here in the form of comprehensive tables and at the end of the book. Chapter II discusses the principles of Dirichlet and Thomson, which in Chapters III and IV are applied to estimation of capacity C. Here the Dirichlet principle yields upper bounds for C, and the Thomson principle furnishes lower bounds for C. In Chapter V other methods (such as conformal mappings) are used for estimates of torsional rigidity and principal frequency, and in Chapter VI nearly circular and nearly spherical domains are discussed. Chapter VII contains diverse remarks of symmetrization, which is also discussed in the Notes A–F; Chapter VIII elaborates the cases of ellipsoids and lenses.

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Linear Polymers. Elizabeth M. Frith and R. F. Tuckett. London–New York: Longmans, Green, 1951. 355 pp. $3.50.

The authors of this book have undertaken the difficult but necessary task of presenting the general physical chemistry of high polymers in a form suitable for a graduate in chemistry who intends to start research in the subject either in industry or at a university. And for such a person they have produced a valuable book. On occasion he might find the pace rather slow, for the authors adhere to the advice given to Alice, and start at the very beginning. A lengthy chapter is devoted to general principles of thermodynamics, for example, in which the whole content of an undergraduate's training in that subject is reviewed, and developed along lines leading to its application in the solution properties of amorphous polymers. Few readers would object to that. The authors have generously provided an account of the background they expect from the reader.

Although the particular subject of thermodynamics is well done, the authors are not uniformly successful in their treatment. Inevitably, when so many different subjects are dealt with, practical considerations of space will make it impossible to give a preliminary elementary discussion of each. Consequently, some readers may feel that too much time is spent in telling them what they already know, whereas other topics are introduced at an advanced level. Occasionally a subject is presented in so condensed a form, as in the