Chemical Engineering in the U.S.A. P. H. Calderbank. Department of Scientific and Industrial Research, Overseas Technical Reports No. 2. H.M. Stationery Office, London, 1956 (order from British Information Services, 45 Rockefeller Plaza, New York 20, N.Y.). 24 pp. $0.36.

This is the second of a series of surveys made by specialist officers attached to the United Kingdom Scientific Mission in Washington, D.C. The author, P. H. Calderbank, who is now with the Chemical Research Laboratory in England, spent some 4 months in the United States in 1955, during which time he visited a number of university and industrial establishments and had discussions with many people concerned with the selection, training, and employment of chemical engineers. His report deals with the development of chemical engineering, the present status of chemical engineering education, and the way in which chemical engineering practice has developed.

Electrical Measurements and Their Applications. Walter C. Michels. Van Nostrand, Princeton, N.J., 1957. 331 pp. Illus. $6.75.

The techniques of electric measurements have undergone substantial changes in the past 10 or 15 years. Part of this is the result of the great advances in electronic instrumentation which have made available, on a commercial basis, equipment of considerable stability and reliability, covering a tremendous range of frequencies, from direct current into the microwave region. The requirements of automation and automatic recording of technical information, furthermore, have extended the application of electric measurements into all fields of science and technology. To attempt to present an up-to-date textbook which covers the range of electric measurements, techniques, and instrumentation used today is, indeed, a challenging task. *Electrical Measurements and Their Applications* gives a surprisingly good survey of the situation. It is a revision of earlier editions by the same author (*Advanced Electrical Measurements, 1932, 1941*) but the changes in this book are sufficiently extensive to make it a successor to the earlier editions rather than just a new edition.

The book is prepared for junior and senior students in science and engineering, although it would also be a good reference book for the more advanced experimentalist. The first part, which consists of nine chapters, deals with basic ideas and with the instruments and techniques commonly found in electric measurements laboratories. The discussion starts with chapters on basic techniques of direct-current measurements. These are followed by chapters on phenomena at increasingly higher frequencies, concluding with one on microwave instrumentation and technique. In each chapter, detailed instructions are given for a number of experiments which illustrate, for the student, fundamental principles and techniques discussed in the chapter. A total of 43 experiments are described.

The second part of the book discusses applications of electric measurements in the fields of magnetism, thermometry, mechanics, acoustics, and nuclear physics. The treatment is necessarily brief but is accompanied by a number of references, to provide further detailed information. This section will be useful to the practicing engineer or scientist.

The book is well illustrated by photographs and diagrams of commercial instruments that are widely used today in industrial and government laboratories. The discussion of the operation of these instruments is limited to design features essential to their use.

In approximately 300 pages this book gives a condensed and lucid treatment of electric measurements as practiced in today's laboratories. It should serve as a valuable textbook in college electric-measurements courses and as a handy reference work for the advanced student or research scientist and engineer.

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Breads, White and Brown. Their place in thought and social history. R. A. McCance and E. M. Widdowson. Lippincott, Philadelphia, 1956. 174 pp. Illus. $5.

Breads, White and Brown is an admirable summary, covering 3000 years of the perennially moot question of the relative virtues or vices of white and brown breads. Perhaps the plagiarized title, "Through the alimentary canal with gun and camera," would not be descriptively amiss.

The historical development of white flour and its reflections of social conflicts and economic states is traced deftly through medieval and early modern England. With the advent of the newer knowledge of nutrition in the period of "peace and plenty" (1820–1914) and the period of "shortages and war" (1914–21), the proteins, minerals, and vitamins came into prominence. The extent to which the healthfulness of wheat is milled out in the manufacture of white flour became a crust of contention and political machinations throughout the "return to plenty" (1921–39) and World War II (1939–46) and indeed is still a lively subject.

The authors review the experimental work, the by-play of opinions and politics, and the differences in measures taken to resolve the problem, with fairness and considered judgment. From their own tests with children, described in some detail in chapter VIII, they conclude that bread has a much higher nutritional value than has been supposed, but no differences are notable in the value of whole meal, white flours, or white enriched flours.

So whatever the case, debate on the relative merits of white versus brown breads must go on, with forbearance and with considered judgment to express the diverse viewpoints of "people's health, the public's wishes, the nation's purse, or [the] shareholders' pockets."

This book is highly recommended for a well-balanced presentation of a difficult subject.

LEROY VORIS
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Methods in Enzymology. vol. III. Preparation and assay of substrates. Sidney P. Colowick and Nathan O. Kaplan. Academic Press, New York, 1957. 1154 pp. $26.

Volume III of *Methods in Enzymology* furnishes the information on substrates that is needed for assay of the enzymes described in the previous two volumes. The series can now be used for much of the usual enzyme work without further recourse to the original literature. The present volume is thus an integral part of the previous ones and, in addition, presents methods for the preparation and determination of at least 200 compounds of general biochemical interest.

The organization of this vast amount of information follows that of volumes I and II. Volume III consists of seven sections: carbohydrates, lipids and steroids, citric acid cycle components, proteins and derivatives, nucleic acids and derivatives, coenzymes and related phosphate compounds, and determination of inorganic compounds. It should be noted that each article in volumes I and II gives the appropriate reference to volume III for the required substrate.

The presentation in most of the articles is up to the high standards of the previous volumes. However, this volume cannot be given the same unqualified recommendation. There are gaps in the methods described in several of the fields, which limit the usefulness of the book. To cite three examples which come to mind, no mention is made of