tions and the general scheme of industrial instruments. Little practical information is given except that which is available in instruction manuals. High-resolution instruments, microelectrodes, carbon dioxide tension, and the Na^+ and K^+ electrode systems are not mentioned.

In the chapter on ultraviolet and visible absorption spectroscopy the basis, form, and functions of commercial spectrophotometers are presented. Fluorescence and flame photometric methods are only briefly mentioned. Other emission methods and atomic absorption are not included.

In some 33 pages on infrared absorption spectroscopy, Clara D. Smith presents a succinct review of the elements of infrared absorption methods and their value in biochemistry. A chapter entitled "Manometric devices" presents classical Warburg techniques in 11 pages, with no mention of Cartesian diver methods. In the chapter on osmotic pressure measuring devices, some classical methods are described but instruments that have been available for several years are not considered.

A chapter on transducers and one on read-out devices are concerned with what is generally conceded to be instrumentation in that the physical basis and limitations are given for a number of important transducers in current use. Measurement of nuclear radiation is treated only in relation to the elementary principles of the transducers. The instrumentation of scintillation counters, pulse-height analyses, and data handling are omitted. Discussion of solid-state devices and the consequences of their availability in modern instrumentation is conspicuously absent.

In the chapter on read-out devices digital devices are mentioned but no distinction is made between digital computers that handle the data in digital form and those that use an analog method and present the data in digits derived from the analog function.

The effort to provide a book on instrumental methods for the biologist is commendable, but the scope of the field is so great that any rational effort must involve selection which, I feel, should have been more discriminating. The book should have been more suitably titled.

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A Collection of Mathematical Problems

The Pleasures of Math. A. W. Goodman. Macmillan, New York, 1965. 224 pp. Illus. $4.50.

The principal attraction of this book is an extensive collection of problems that range from the extremely simple to the very difficult. The author has made a nice selection of topics that should be stimulating to those high school and beginning college students who wish to supplement their mathematics studies. However, those who wish to supplement their study of trigonometry, probability, or calculus must look elsewhere.

Goodman says that he has aimed at four classes of readers: high school students, high school teachers, college students, and parents. I do not think that he will carry along many of the last group. The author states that "a student who finishes this book . . . is fully prepared to start calculus." One might question this assertion in view of the omission of trigonometry and the slight attention given to analytic geometry. However, his primary purpose seems to be to entertain, and he has achieved this quite well.

Some statements may lead to misunderstanding: for example, "Not all inequalities involving a positive integer n require mathematical induction"; "if this assertion is not obvious, it can be proved by mathematical induction"; and "we have proved this principle (of mathematical induction)." Terms such as "smaller" polygon, "dominant" term, and "series" appear without definition. The definition of "divisor" does not exclude zero and the prime factorization theorem does not exclude one. The fundamental principle of counting is "proved" and extended to k factors without mathematical induction. The greatest common divisor is discussed without reference to the Euclidean algorithm.

The book (224 pages) includes an index, a bibliography of 30 titles, and answers to all the problems. Magic squares, the four-color problem, conic sections without coordinates, extremes without calculus, and the theory of numbers are discussed. The 35 sets of problems form the major contribution of the book.

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Economics: Agriculture and Economic Development

Economic Crises in World Agriculture. Theodore W. Schultz. University of Michigan Press, Ann Arbor, 1965. viii + 114 pp. $3.50.

In the four chapters of this book, Theodore Schultz examines the role of agriculture in the economic development of less-developed and developed countries. He treats the matter in terms of two agricultures. One is the "traditional" agriculture characterizing less-developed countries. Another is the "modern" agriculture characterizing the developed countries, especially the United States.

Schultz's thesis is that, within both the traditional and modern agricultures, there comes a juncture in economic development wherein a stagnant and depressed agriculture causes a crisis. However, the crises within the two agricultures are wholly different. The book is devoted to examination of causal factors generating these crises and to possible avenues of escape.

The two initial chapters, drawing heavily upon his earlier book *Transforming Traditional Agriculture* [Yale University Press, 1964; reviewed in *Science* **144**, 688 (1964)] deal with the nature and explanations of the crisis within agricultural sectors of less developed countries. The third chapter appraises the efforts made by the United States to assist less-developed countries in their efforts to modernize their agriculture. The fourth and final chapter examines the nature and possible explanations of the crisis in modern agriculture, with special reference to the United States.

Within the traditional agricultures, Schultz concludes that their serious food shortages can be solved only through large increases in agricultural production and marked declines in population growth. Aside from noting the retarding consequences of population growth on improvement in food supplies, Schultz leaves the population question and concentrates on in-