Chromatographic Reviews. Progress in chromatography, electrophoresis, and related methods. vol. 1. Michael Lederer, Ed. Elsevier, Amsterdam, Netherlands, 1959 (order from Van Nostrand, Princeton, N.J.). ix + 276 pp. Illus. $8.75.

Those who recall, for example, the search for specific precipitants for each of the 20-odd amino acids in protein hydrolyzates, or the innumerable fractional crystallizations required for the separation of the rare earths, appreciate the revolution in biological and inorganic chemistry that chromatography has brought about. This is a book that reports progress in that revolution, a book that could equally well be described as a monograph, a bound volume of a journal, or a supplement to the widely used *Chromatography* by Lederer and Lederer. Of the nine chapters, four have been translated from the French or German in which they appeared in the *Journal of Chromatography*. Reio's chapter on new equipment for recording chromatograms and its application to phenol derivatives represents original work. The longest chapter is a translation of Neher's monograph on the chromatography of sterols and related compounds. Other chapters deal with the chromatography of the curare alkaloids, chloroplast and anthocyanin pigments, and inorganic phosphorous compounds. Demole describes the preparation of films on glass for use in adsorption chromatography, and two chapters are devoted to electrophoresis.

Much of the work refers to paper chromatography, but results with columns and with disperse, solid phases other than cellulose are reviewed in some instances. In their discussion of solvent systems all of the contributors utilize the concept of polarity, but the discussion is presented in such general terms that the selection of the most suitable system for a given mixture remains largely empirical. Less frequently an attempt is made to relate the structure of the material being chromatographed to its R_f or R_s value. Although chromatography is useful in structure determinations, all authors agree that this technique must be supplemented by one or more of the classical procedures of organic chemistry.

The review of high-voltage electrophoresis by its originator, Michl, will doubtless help to overcome the lag in the use of this method. One marvels at the separation of the amino acids that are obtained when the mixing effect of diffusion is minimized by the use of steep potential gradients. Included in this chapter are data on other materials of biological interest. From the results reported by Chemla, it appears that the failure of Kendall to separate the lithium isotopes by electrophoresis was due to the insensitivity of the method of isotopic analysis that he used in this pioneer work. The mobility differences of many of the isotopic ions are now known, however, and it is of interest to note that these differences are less for the hydrated ions in aqueous media than for the same ions in fused salts.

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Trigonometric Series. vols. 1 and 2. A. Zygmund. Cambridge University Press, New York, ed. 2, 1959. xii + 383 pp.; vii + 354 pp. $15 per volume; $27.50 per set.

The first edition of this treatise appeared in the collection *Monografie Matematyczne* in Warsaw in 1935. The young, brilliant author was professor at the Polish university of Wilno. The book was accepted right away as the standard text in the field. It was reprinted in New York after the war, when the Polish edition became unavailable. (Zygmund has been in this country since 1940, at the University of Chicago since 1947). In a way it is fitting that the new edition should be published by the Cambridge University Press, for much of the theory stems from Cambridge, and much of the preparation of the manuscript of both editions was done while the author was a visitor there. It is only a pity that publication of such a magnum opus cannot be supported by a subvention that would bring the price within the budget of the average American mathematician.

In the revision, the single volume has become two. The first volume contains most of the material of the original edition, greatly expanded and brought up to date. A considerable part of the second volume is completely new. The treatise is likely to maintain its role as the standard text in the field for another couple of decades. It is essentially classical mathematics at its best. It deals with trigonometric series and the many contacts which this theory has with real and complex variables. It is not concerned with modern harmonic analysis, and there is no mention of group characters. The author, in his preface, calls attention to the fact that the theory of trigonometric series has been a source of new ideas for analysts during the last two centuries, and he adds that it is likely to be so in years to come. I heartily agree.

A list of the contents will give the reader of this review a notion of the wealth of material included in the treatise. There are nine chapters in volume 1: (i) Trigonometric series and Fourier series. Auxiliary results; (ii) Fourier coefficients. Elementary theorems on the convergence of $S[f]$ and $\tilde{S}[f]$; (iii) Summability of Fourier series; (iv) Classes of functions and Fourier series; (v) Special trigonometric series; (vi) The absolute convergence of trigonometric series; (vii) Complex methods in Fourier series; (viii) Divergence of Fourier series; (ix) Riemann's theory of trigonometric series. There are eight chapters in volume 2: (i) Trigonometric interpolation; (ii) Differentiation of series. Generalized derivatives; (iii) Interpolation of linear operations. More about Fourier coefficients; (iv) Convergence and summability almost everywhere; (v) More about complex methods; (vi) Applications of the Littlewood-Paley function to Fourier series; (vii) Fourier integrals; (viii) A topic in multiple Fourier series. Historical notes and an excellent bibliography complete the volume.

The printing and format are first rate.

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Population: An International Dilemma. A summary of the proceedings of the conference committee on population problems, 1956–1957. Frederick Osborn. Population Council, New York, 1958. ix + 97 pp.

This modest volume summarizes discussions held over a period of 2 years by a committee set up by the trustees of the Population Council. The purpose of these discussions was to explore the nature of the population crisis and to attempt to define steps which might be taken to resolve it. Discussants ranged from statisticians to clergymen, from the director of an institution concerned with international education to the author of a book on the depletion of resources.

Frederick Osborn, director of the

Population Council, has condensed the 500 typed pages of memoranda and transcript into 89 printed pages.

The book is divided into two parts: "Outline of present conditions"; and "Indicated lines of action." This thought-provoking survey should be required reading for every person concerned with the population problem, which the United Nations has described as having an "importance which transcends economic and social considerations. It is at the very heart of the problem of our existence."

In his summary, Osborn reviews some of the difficulties involved in getting to the heart of this dilemma: "The attempt to control mortality is becoming a major social activity all over the world. The resulting decline in deaths is bringing about rapid changes in population trends. The rate of population growth in many underdeveloped areas is now much greater than was ever experienced in European countries. In most of the others it will be so in the foreseeable future. And the population base is far larger than it ever was in Europe. Unless an effort equal to that made for the control of death is made for the control of fertility, and unless a reduction of births is achieved within a few decades, the hopes of great but underdeveloped nations for better conditions of life may prove futile, while the present standard of economically advanced nations will decline. Such a tragic failure to achieve the higher levels of living that should be possible could only bring disillusion, confusion, and the danger of resort to desperate measures."

The concern with this "central problem," voiced by the United Nations, appears to be amply justified.

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The Great Pulse. Japanese midwifery and obstetrics through the ages. Mary W. Standlee. Tuttle, Rutland, Vt., 1959. 192 pp. Illus. $4.50.

Japan's medicine, even more than her culture, is a product of successive foreign influences which were superimposed upon the indigenous practices, adapted locally, and blended into a colorful mosaic. The art of writing was unknown in Japan before the introduction of the Chinese character in the 6th century A.D., and all knowledge of earlier ideas had to be culled from uncertain sources and from surviving practices of the basic Shinto religion. Documentation began with the earliest medical books taken bodily from the Chinese.

Japanese obstetrical practice, however, obviously antedated the advent of the written word. As in all early cultures, Japanese women were attended in pregnancy and childbirth by untrained female relatives and neighbors or by midwives with varying degrees of skill. The tenets of Shinto make it evident that all natural female functions, such as menstruation and childbirth, were considered ritual impurities which demanded segregation of the individual. The first Chinese book used in Japan pronounced pregnancy a disease of the blood and so strengthened the taboo aspect of this condition.

According to this oldest known Chinese medical classic, the *Huang Ti Nei Ching Su Wen,* diagnosis of early pregnancy was made from the pulse. "The great pulse," the name by which this symptom was known, was taken as the title for Mary Standlee's book. In this work she describes the amalgamation of indigenous practices and beliefs with those of foreign origin. Throughout the narrative two essential points recur again and again: the wealth of persistent superstition of ancient origin that surrounds pregnancy and childbirth and the continuing employment of midwives as the chief obstetrical attendants in present-day Japan.

The book is the only Western study which deals with the complete history of Japanese obstetrics, and, as such, it is a welcome and important contribution. Unfortunately, the author admittedly is not thoroughly familiar with Oriental thought, and this deficiency is noticeable, although she acknowledges the help of experts. This lack is manifest in her treatment of the ancient basic Chinese concept of the Yin and the Yang, the universal dual force whose balance assures peace and health and whose imbalance brings disaster and disease. The author's approach to this abstract concept is oddly feministic, revealing her resentment that negative attributes are symbolized by Yin, the female half of the dual force. Although her reaction is disguised by awkward jocular expressions, it appears to indicate that she equates this cosmic force with the subordinate position of women in Japanese society. Similarly, the résumé of the legends of the Divine Age, dealing with the origin of the imperial family, is given in a bantering manner which may be intended to lighten the tedium of dynastic history but falls short of being amusing.

Passing references to Japanese medicine also reveal a lack of knowledge of some of its fundamental elements. Although acupuncture and moxa treatment are frequently mentioned as "panaceas," the theory underlying their use is never explained. And the *Huang Ti Nei Ching Su Wen,* the oldest Chinese book on internal medicine, is referred to as "the materia medica of early Chinese civilization," although its emphasis on medicinal substances is negligible compared to that of the *Pen Ts'ao,* which is devoted exclusively to drugs.

These flaws will be disturbing mainly to those familiar with the history of the Far East, who will find the book lacking in depth. To the less critical reader, for whom it is apparently intended, it will prove interesting and informative. The material dealing with more recent events is drawn from essentially good personal observation, and is accurately presented. The illustrations are well selected and excellently reproduced.

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Mutilaciones Dentarias Prehispanicas de México y America en General. Javier Romero. Instituto Nacional de Antropología e Historia, Mexico City, 1958. 326 pp. Illus.

The practice of filing the edges of the front teeth into various shapes or of ornamenting the labial surfaces of the upper front teeth with inlays of jadite, pyrite, turquoise or (rarely) gold, never had very wide acceptance among prehistoric American Indians. In the main, it was restricted to the high-culture populations of what is now Mexico, Guatemala, and British Honduras—in other words, Meso-America. From this center, elements of the practice are believed to have spread northward, up the Mississippi Valley to the region of the present city of St. Louis, and southward to what is now Ecuador, without, however, leaving traces in the intervening regions. Traces of this custom have been found, also, in the American Southwest and as far away as Bolivia, Chile, and Argentina. Surprisingly, nothing of the sort has been found in Panama and Peru.