ual cycles, rhythms in dormancy of plants, hibernation of mammals, and seasonal migrations), and, finally, specifically with circadian rhythms in man. These latter, most conspicuous and extensively studied rhythms in man are treated in a separate chapter, with special attention to the sleep-wakefulness rhythm. Circadian variations of interest to the clinician, such as those in body temperature, blood pressure, pulse, and basal metabolic rate, are noted. The reader may wish for more specific reference to some of the studies mentioned, but perhaps the indications given in the bibliography of the books and articles where such specific reference can be found will be sufficient.

The recurring biologic phenomena discussed by the authors are those with a more or less similar time interval separating two comparable states. Terminology has been modernized according to current usage. Because a clear understanding of the reason for the use of certain terms—for example, *circadian* to designate rhythms with periods of about 24 hours—is basic to the ensuing discussion, the reader should give particular attention to the preface.

The text is further brought up to date by a succinct discussion of rhythms in their relationship to work hygiene as well as to intercontinental and extraterrestrial flights. Extensive work on rhythms done at the University of Minnesota is well summarized in the new edition.

By recent cave studies Michel Siffre, who lived for 2 months without known time cues, has produced substantial evidence that the sleep-wakefulness rhythm is to a large extent endogenously free-running rather than merely "learned"; thus, the discussion of Pavlov's hypothesis concerning the nature of this rhythm no longer occupies a prominent place in the second edition or in this translation.

An elementary but sound and lucid discussion of biological rhythms is not easy to come by in this rapidly developing field of study. In this respect, Reinberg and Ghata have made a positive contribution. Their book is not intended for, nor is it recommended to, the specialist, but it will be useful to students and to researchers starting work on rhythmic functions. And it will be of interest also to clinicians and investigators in other fields.

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Organic Chemistry: Instrumental Techniques

Physical Methods in Organic Chemistry. J. C. P. Schwarz, Ed. Holden-Day, San Francisco, Calif.; Oliver and Boyd, Edinburgh, Scotland, 1964. xii + 350 pp. Illus. $9.75.

This attractive and well-produced little book is the most recent addition to a quite numerous family of treatises, surveys, and reviews in which modern techniques for determining physical constants are related to applications where they are particularly useful. The editor and contributors (all teachers of chemistry in the United Kingdom and Australia) are aware that, on the one hand, they are competing with more detailed compendia which cover similar ground (and even have almost identical titles) and, on the other, that there is no lack of monographs in which individual methods are treated in great detail.

Wisely, a decision was made to fit this collection of essays primarily to the needs of students who are exposed to instrumental techniques for the first time and who are not yet expected to select one for a particular purpose or to familiarize themselves with details of the state of the art. Application to structural problems in organic chemistry are stressed. From this point of view, the book is successful. The introductory section and nine chapters ("Ultraviolet, visible and infrared spectroscopy" by P. Bladon and G. Elington; "Infrared and raman spectroscopy" by G. Elington; "Ultraviolet and visible spectroscopy" by P. Bladon; "Magnetic resonance spectroscopy" by L. M. Jackman; "Optical rotation" by J. C. P. Schwarz; "The determination of molecular weight" by C. T. Greenwood; "Diffraction methods" by G. A. Sim; "Mass spectrometry" by R. I. Reed; and "Dipole moments" by B. L. Shaw) are clearly written. Examples of applications are up to date; the references lead on to more detailed treatments. Commendably, the book does not contain a single meaningless photograph of the outside of a "black box."

The level of sophistication varies among the various chapters. For instance, the chapter on magnetic resonance spectroscopy assumes a far greater appreciation of physical principles than the brief introduction to mass spectroscopy. Separation techniques, without which many of the physical methods are unusable, are omitted all together. But, no matter. The book is a good introduction to an important field. It will stimulate the imagination of a perceptive student, and as he progresses toward more involved problems, he can find more detailed assistance elsewhere.

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Decision Making and Its Application

Operations Research: Process and Strategy. David S. Stoller. University of California Press, Berkeley, 1964. viii + 159 pp. Illus. $5.

Operations research is concerned with the science of decision making and its application. In this small volume, David S. Stoller, a senior research scientist at the RAND Corporation, does not attempt to provide a comprehensive survey of the techniques adopted by operations research; rather, he focuses briefly on its history, characteristics, and two types of operational problems: servicing and strategy. These are handled by queueing theory and game theory, respectively.

It appears that this book, which is divided into 23 chapters that average about six pages each, stems from the author's numerous lecture series on selected topics in operations research. In keeping with the typical mathematical background of the audiences for such lectures, only an introductory knowledge of calculus, statistics, probability, and the theory of equations is required for reading this work. Although he verifies many mathematical assertions, Stoller makes the material more palatable to the nontechnical reader by avoiding the Satz-Beweis style of exposition so frequently encountered in the mathematical sciences. In short, this is a book intended for the reader who seeks a "feeling" for operations research instead of an overall training in its techniques.

The treatments of both queueing theory and game theory are thus rather limited in scope. The servicing systems studied deal mainly with Poisson arrivals having negative exponential serv-