

# Preface

Reading this book will not necessarily make you a better student of life. It will, however, help you to see, to hear, and to observe “that” which would otherwise escape your attention. In the present context, “that” represents the rhythms of life, which occur within us and around us.

This book has been written for students and others, including teachers in the life sciences, clinical personnel, biomedical researchers, and the general public, who are interested in the topic of biological rhythms. It is not a comprehensive treatise, but a “primer” that serves to introduce individuals to the important and fascinating topic regarding the rhythmic changes that affect all living organisms. During the more than three decades that we have been engaged in research and teaching the subject of biological rhythms, our students have depleted the available supply of different books<sup>1</sup> that provided supplemental reading material for these courses. Discussions with students, colleagues, and others often led to the question “*Where can I find out more about this topic?*” Faced with such a situation, we embarked upon the journey of writing this book, first putting fingers to the keyboard in the fall of 1998. Since biological rhythms are a fundamental property of all life and encompass a wide range of frequencies, from seconds to a century or more, we chose to write a book that is broad in scope, covers all major groups of organisms, and discusses rhythms with periods that span the ultradian, circadian, and infradian domains.

In many educational institutions, a biological rhythms course serves as an elective for satisfying a science requirement, as a seminar or for continuing education credit. Even for those who are outside the academic disciplines, the book serves as a primer that introduces the major characteristics of biological rhythms, cites scientific results and references, and discusses the implications and applications of rhythms. Essays provide in-depth historic and other background information that relate to the main topics.

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<sup>1</sup> E. Bünning (1958) *The Physiological Clock*. Berlin: Springer-Verlag.

Moore-Ede MC, Sulzman FM, Fuller CA. (1982). *The Clocks That Time Us. Physiology of the Circadian Timing System*. Cambridge: Harvard University Press.

We trust that the following pages will serve as an easy to understand book that will enlighten and involve the novice, while being sufficiently technical and detailed for the experienced professional. The book includes a unique chapter on self-monitoring of one's own rhythms (autorhythmometry), which has been one of the more fascinating topics for our students in helping them to develop a greater understanding of the characteristics and role of biological rhythms in the temporal organization of their own lives.

Rather than focus on a few specialized areas, our aim has been to provide a book that broadly covers the field of biological rhythms, without the pretext of being completely comprehensive. For this reason, we may have overlooked certain topics or missed citing some key references. If we did not delve deeply enough into an area, we trust that the material presented will sufficiently intrigue the reader to seek out additional information.

New information on molecular clocks, genes, and pathways continues to accumulate at a rapid pace, as do findings from chronotherapy (timing of medications), investigations into sleep and its disorders, the clinical relevance of melatonin, and the effects of excess light or unusual lighting schedules on the health and survival of organisms, including humans. Names of authors and key words in the references cited provide a starting point for the search for additional information or clarification on topics of further interest.

Finally, while we have tried to be as conscientious as possible in citing and writing about topics and facts contained herein, an error now and then might have occurred. In spite of the eyes of many, any such errors that slipped by our attention are entirely our responsibility. We certainly welcome comments from the readers on any aspect of this book.

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*Willard L. Koukkari*  
*Robert B. Sothorn*

Introducing Biological Rhythms

A Primer on the Temporal Organization of Life, with  
Implications for Health, Society, Reproduction, and the  
Natural Environment

Koukkari, W.L.; Sothorn, R.B.

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