SUBMITTING BOOKS AND SOFTWARE FOR REVIEW

The editors invite authors and publishers to send two copies of books or software for review in this column. These should be sent directly to the editors responsible: books to Dr. Kenneth B. Roberts, Faculty of Medicine, Memorial University, St. John's, NF A1B 3V6, Canada, and software to Dr. Harold Modell, PO Box 51187, Seattle, WA 98115. The editors will decide which submissions will be reviewed for publication.

Software authors should send a cover letter stating installation instructions, the kind of students for whom the software is designed, and information about cost and availability. Software deemed appropriate for review will be examined by one or more physiology teachers experienced in the use of computer-based education. When appropriate, authors will have an opportunity to respond to the reviewer’s comments before going to print, and the final version of the review and the author’s response will be published together.

BOOK REVIEW


This book is the autobiography of a physiologist now in his 84th year. It has been constructed from letters, journals, printed papers, and from memories. It includes the stories of his discoveries, the results of work done in some of the most inhospitable parts of the world—in hospitable to people, that is. Because of remarkable physiological adaptations, these are environments in which many fine animals are completely at home. Knut Schmidt-Nielsen (KSN) has interspersed his adventurous life with residence in intellectual environments most hospitable to him: university laboratories at Oslo; Copenhagen; Swarthmore College; Cambridge, England; and especially at Duke University, where he has held a distinguished chair since 1962.

His circle of close colleagues has included many effective scientists. Even as a young man during the German occupation of Denmark in World War II, he was acquainted with Niels Bohr, George de Hevesy, August and Marie Krogh, K. Lindström-Lang, Hans Ussing, and others.

This is a book about his life, personal and professional. It is also a classic story book about animals, in which nearly every adventure turns out in a satisfactory way. Exciting incidents occur in the Arizona desert, the Sahara, the Australian and the South African bush, the Amazon.... Adversity is overcome. In counterpoint, KSN records, among the human participants, depressions, sterile times, painful separations, and tragic suicides. The author lives to achieve fame, recognition, and, eventually, contentment: fame, as a physiologist of the intact organism within its environment; recognition, as a remarkable experimenter and expounder of physiological principles; and contentment, in both his personal and public life. He is happily partnered by his third wife and has received high honors in the U.S., Scandinavia, and Japan,..., and he has been President of IUPS. His adventures have required the classic manly qualities of leadership, persistence, and intelligence, admixed with cunning and contrivance. (I felt guilty as I skipped pages on which he records how he overcame difficulties at the Beni Abbes oasis in the Sahara or on the motor vessel/laboratory The α-Helix on the Amazon.) I admired his recording of the fortitude of another excellent physiologist, Bodil Schmidt-Nielsen, Knut’s first wife, the biographer and daughter of August and Marie Krogh. In the 1960s, as Knut describes, Bodil Schmidt-Nielsen was nursing her dying father, looking after their children, and recovering from a car accident, all of which
interrupted her research work for only brief periods. She and Knut wrote papers together “as a team,” but Knut’s arguments “prevailed” as to the direction of their work. His account of their estrangement and divorce adds poignancy and sadness to the story. The author, earlier in this book, describes how his mother—physicist and mathematician—had to leave scientific work when she married a scientist. In the experience of many physiologists during the 1950s and 1960s, including my own, women researchers were generally regarded as different and not exactly equal. To our great loss they still are regarded as such, even in the late 1990s, even in Scandinavia [I refer to C. Wenneras and A. Wold (Nepotism and sexism in peer-review. Nature 387: 341–343, 1997); see also P. A. Hansen (Opportunity knocking. Adv. Physiol. Educ. 18: S1, 1997)].

In the contexts of physiological education, what insights can result from time spent reading this account of how a remarkable physiologist lived his life and researched his science?

• For the undergraduate: Physiology as lived can be seen to be exciting, even hazardous. The organism acts and reacts in an integrated manner. It is possible to understand integrated mechanisms. Questions of principle, such as physiological balance sheets, active sodium transport, or counter-current exchange or multiplication, are simple and elegant; they may be applied to many physiological processes. KS-N discusses his students’ work on the cold, but not too cold, feet of a male penguin standing upright incubating his mate’s egg throughout a fierce Antarctic winter.

• For the graduate student: Physiological principles are revealed, some not found easily in deep reductionist research papers. These generalizations will be of service later, suitably modified for different circumstances. Horizons will be enlarged.

• For the teacher: The book approaches physiological questions in a very direct manner, showing how KS-N went about uncovering precise mechanisms of the organism in its environment. This is what physiology, human as well as animal, is about. The approach can and should be foremost when courses are designed, presented, and evaluated.

• For authors: KS-N achieves his effectiveness as a writer of wonderful texts by clear thinking, fine writing, and organized study. His methods are described in this book.

• For us all: We use News in Physiological Sciences, and we thank him for starting this great aid for surviving the avalanche of information.

Physiologists now have to adapt to an academic world that differs from that described throughout this book. KS-N’s penultimate paragraph: “Today I can in good consciousness steer towards a research career only those young people who possess and irresistible curiosity, an overwhelming urge to devote all their efforts to solving problems, and a high degree of tolerance for frustration and discouragement.” Can our special kind of scientist adapt to this harsh environment and survive?

This autobiography explains the public and private background to KS-N’s remarkable work and his body of writing. It is, in some sense, a closure for his life’s work. We hope he is thinking of starting some quite new piece of writing; it will be sure to interest us.

I list KS-N’s books as suggested reading; all may be recommended to both student and faculty colleagues.

I note the fine drawings of animals in KS-N’s memoirs. They enliven and illustrate the pages beautifully. They are by Kathryn K. Davis.

SUGGESTED READINGS

References


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