secticides (penetration, metabolic degradation, and the like).

After reading through this small book, I find it difficult to do more than compliment the authors who undertook such a prodigious assignment within so few pages. I do wonder whether the book can be profitably used by one who is *only* an entomologist or a radiologist, but there is no question that it will be valuable to either, provided he already has an introductory appreciation of the other field. I profited from reading the book but was unable to avoid noting sentences like the following, "The principle is simple" (p. 102). There is nothing in this sentence which indicates that the *art* of the game is tricky and laborious. I also wonder about the wisdom of including a section on vision, despite its being within the scope of the title. But these and any other points I might raise about this volume reflect primarily slight differences in point of view. The authors obviously know whereof they speak, and the volume should be really useful to a significant fraction of each of the two audiences to which it is addressed. It is to be recommended.

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Space Physiology

Physiological Problems in Space Exploration. James D. Hardy, Ed. Thomas, Springfield, Ill., 1964. x + 333 pp. Illus. $12.50.

This book is a refreshing change from the plethora of hastily compiled almanacs on the space explosion. James Hardy has produced a valuable text and reference work on space physiology; it is composed of nine monographs by Hardy and six of his colleagues at the Naval Aviation Medical Acceleration Laboratory, the Aerospace Crew Equipment Laboratory, and the University of Pennsylvania Medical School.

Hardy himself is an authority on the biophysics of heat radiation and on acceleration. The monographs on temperature, acceleration, and weightlessness, which he prepared for this book, are models of lucid, scientific exposition, competently illustrated with pertinent tables, graphs, diagrams, and photographs. The formulas and equations for temperature and acceleration, relating to space flight and environment problems of survival and protection, are understandable to both medical and engineering students. He sets a high standard for the other authors.

Clark, an authority on acceleration, must have felt trepidations at undertaking a review of high energy radiations. But his well-organized, scholarly presentation gains more from his insight into the implications of the space environment than it loses from being outside his primary field of research. He teaches others by having taught himself from a well-selected bibliography of 55 references. In contrast, Brobeck, in the chapter on food requirements in space, assumes that his readers will be well-versed in the subject and thereby relieves himself of the need to elucidate. From the standpoint of a "space gourmet," he expresses intuitive opinions, interesting and provocative, but not substantiated by factual data. He refers prefunctorily to a bibliography of 30 unnumbered entries, leaving the reader to make his own review.

Another chapter that needs more homework is the one on sensory and perceptual problems in space flight, by Brown. Surely, the 51 references cited by Brown could have provided a few tables, graphs, or diagrams. Paradoxically, Halberg, in his monograph on physiological rhythms, almost goes into semaphore to convey information via graphs and diagrams. He points out an insidious variable in biological experiments: how diurnal and seasonal physiological rhythms modulate tolerance to other stresses. Hormone experiments are significantly modified by the time of day hormones are administered. The adaptations of astronauts to 18 sunrises and sunsets daily over a period of weeks in orbit should be interesting. Chambers expertly reviews 124 references on isolation and disorientation. He compares data from space and high altitude balloon flights made by the United States and the U.S.S.R. with data from ground simulators with respect to sensory perceptions and adaptations. Labyrinthine anatomy could have been more neatly presented in diagrams than in words. The consequence of this reluctance to illustrate is a cumbersome cataloging of visual details not unlike the effort involved in making a bed by using a walking stick rather than the hands.

Taking nothing for granted, Hendler reviews basic respiratory physiology and relates it to survival requirements in space flight; he then provides a critique of space cabin simulators in which human volunteers are exposed to the gamut of breathing atmospheres and pressures feasible for space flight. Hendler matches Hardy in clarity and effectiveness of exposition. The reader can forgive him for not putting his 50 references in alphabetical order, while wishing that Hardy had listed a few more than 7 or 8 references for each of his chapters.

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Brain and Behavior

Unfinished Tasks in the Behavioral Sciences. Arnold Abrams, Harry H. Garner, and James E. P. Toman, Eds. Williams and Wilkins, Baltimore, 1964. xviii + 264 pp. Illus. $10.

This book contains 23 papers dealing with brain and behavior in animals and man. In the first half of the book, experts on anatomy, physiology, and pharmacology describe the present status of their brain research and project it into the future, while in the second half the psychologists and psychiatrists perform similarly with respect to their spheres of competence. In the introduction Percival Bailey surveys the territory to be covered, and at midpoint Seymour Kety provides an appropriate bridge to connect the two halves of the book. A very short index comes at the end.

Although many of the papers are so brief as to be almost trivial abstracts, others represent contributions of some importance. Eccles, Grundfest, Killam, and Woolsey each take pains to summarize their current views of brain mechanisms, and Woolsey presents an extended description of the medial geniculate projection to the cortex, which has not been published elsewhere. Similarly, Harry Harlow goes into detail on the behavior of infant monkeys following social deprivation, Gardner Murphy states his hopes for a "science of individuality," and Roy Grinker discusses hypothesis testing in psychoanalysis. The range of topics covered is obviously appropriate for the purposes of the symposium that brought