largely to ignore the extensive and often relevant experimental literature, particularly the research bearing on the question of mediational meaning processes. His delightful literary examples, though, not only reflect the impressive range of his reading but exercise the model in a way that the usual oversimplified experimental material could not. Whatever the point of view, readers will recognize that this is a distinguished book that makes an enormous contribution to the psychology of language. It is a rich and difficult book. But there is material here to influence all of the disciplines with a claim to the study of language.

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The Principles of Biological Control. Interrelation of hosts and pests and utilization in regulation of animal and plant populations. Harvey L. Sweetman. Brown, Dubuque, Iowa, 1958. xii + 560 pp. Illus. $8.75.

It is the purpose of this book to acquaint the reader with life histories, habits, methods of handling, and methods of utilizing the organisms that might be used or now are being used for the control of insects and other pests. It is thus a survey and analysis of the world literature, in so far as such a survey is feasible, covering the broad field of biological control of plants and animals. For this purpose choice has been made of species that are well known or that show common variations in the biology of the various groups of organisms. General principles of biological control are stressed wherever feasible.

This is a revision and extension of a work entitled *Biological Control of Insects,* by Sweetman, published in 1936. An extensive bibliography, arranged by chapters, for reference and documentary purposes is included at the end of the text. The book will be especially useful to teachers, graduate students, and research workers.

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Mirror to Physiology. A self-survey of physiological science. R. W. Gerard. American Physiological Society, Washington, D.C., 1958. xi + 372 pp. $5.

The stupendous task of surveying a field of science is emphasized in this book. The detailed study, sponsored by the National Science Foundation, was started early in 1952 with the expectation that it would be completed in approximately two years. Numerous difficulties encountered in this pioneering venture delayed completion until late in 1957. Several intended goals could not be reached but are indicated in the text as worthy of further investigation. There is danger that survey data may become obsolete if there is delay in publication. The information on incomes in chapter 5 demonstrates this hazard.

The first chapters briefly summarize the survey and describe its origin, objectives, and operation. Difficulty is encountered in defining physiology because of its relation to biochemistry, biophysics, and many other fields of science. Perhaps a better name for this division of science would be "dynamic biology." Other chapters discuss occupational motivations, satisfaction, and mobility of physiologists; research programs, facilities, and support; publications and societies; training and recruitment; and the public and physiology. The final chapter is devoted to recommendations based on the interpretation of the survey findings. The appendixes (107 pages) are a useful conclusion to the book.

In reviewing this text, one is impressed with the great effort spent in collecting, clarifying, and interpreting data and ideas for a better understanding and appreciation of physiology. It should prove a very useful reference source for administrators and students.

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Relativity for the Layman. James A. Coleman. (A Mentor book.) The New American Library, New York, 1958. 127 pp. Illus. $0.50.

This is a paperback edition of the 1954 book of the same title, which was reviewed in the *Scientific Monthly* in September 1955.

A great deal of allowance must undoubtedly be made for the necessity for using the popular form of scientific writing. One wonders, however, whether the author should not be criticized for suggesting (page 118) that it may be possible at some time in the future for an astronomer with a powerful telescope to look around the finite universe and see the back of his own head. Mention of the time required for light to travel through such a distance appears to be in order.

Must we not also call it an error to say (page 24) that the sun actually rises eight minutes before it appears to rise? Is the author forgetting that it is the rotation of the earth which brings about the rising of the sun? After the earth has turned to the proper position for sunrise, no further eight-minute waiting period is necessary.

These errors are minor, however, when compared with the author's handling of the "clock paradox"—an error that did not appear in the first edition, which made no attempt to answer the question. He is quite correct in saying that there is no paradox, but wrong in his implication that there is no difference in the ages of twins after one of them has taken a round trip to a star. As d'Abro has said in *The Evolution of Scientific Thought from Newton to Einstein,* "this particular consequence of the theory has been one of the stumbling blocks of practically every lay writer who has devoted his time to criticising the theory of relativity." And we must enlarge the group to include others who profess belief in the theory but have not made a thorough study of it. There is no room for opinion in the matter, and, as a result, mathematical physicists are virtually unanimous in their acceptance of the age difference. On the basis of both experiment and theory we have every reason to believe that travel will help to preserve youth.

Coleman has made a few improvements in the new edition—for instance, in the historical accuracy of his account of Roemer's measurement of the velocity of light through observations of Jupiter's moons.

After cautioning them against the author's treatment of the "clock paradox," I shall gladly recommend the book to my students. Inexpensive popular books on science are doing a great deal to familiarize our young people with scientific concepts. This is especially true when the reading is as palatable as it is in Coleman's little book.

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Scientists' Choice. A portfolio of photographs in science selected and described by leading scientists. F. M. Branley, Ed. Basic Books, New York, 1958. $4.95.

This is a collection of excellently reproduced photographs—self-matted, 11 by 14 inches in size, and suitable for hanging on the walls of a laboratory, study, library, or office. The subject matter ranges from the microcosmic to the macrocosmic.

In the microcosmic field are an electron micrograph of bacteriophage, an x-ray diffraction pattern of an ice crystal, and a living cell seen through a phase-contrast microscope. The macrocosm is represented by photographs of the fantastic Horsehead nebula, in the