

Book Reviews

• Readers' comments on reviews should be addressed to the Editor.

Behavior

COMMUNICATION AMONG SOCIAL BEES, by Martin Lindauer. 1971. Harvard University Press, Cambridge, Mass. 161 p. \$6.95 (hardback).

Lindauer has done exceptionally well in making a large amount of information understandable to the layman. After presenting some general background on communication among animals he leads the reader through numerous experiments designed to answer questions of bee behavior and communication. He states the question before revealing the experiment; thus the reader is made to feel very much a part of the scientific process. Lindauer's simple yet precise style clearly conveys the sense of good scientific technique without coming out and saying "hypothesis, . . . procedure, . . . results," etc. The numerous photographs and simple, well-captioned drawings complement the outstanding text.

This work would be valuable in any high school classroom. The way in which communication among bees is described makes this book truly captivating.

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ON BEING STONED: A PSYCHOLOGICAL STUDY OF MARIJUANA INTOXICATION, by Charles T. Tart. 1971. Science & Behavior Books, Palo Alto, Calif. 333 p. \$7.95.

This is a report of a federally financed study of 150 experienced marihuana-users. Data were obtained by the use of a questionnaire made up of more than 200 items. Each item was to be answered on a "frequency" scale and a "how stoned" scale. Thus the results reported are almost overwhelming, and they constitute the bulk of the book. The presentation of data is effective: there are chapters on the effects of marihuana on vision, hearing, sexuality, and cognitive processes, to name only a few.

In my opinion the author is hypercritical of previous marihuana studies; for instance, he refuses to provide even a brief review of the literature. I also regard the author as somewhat optimistic about the merits of his own study, in that he does not provide the usual objective and critical self-evaluation as to the contributions and limitations of his study. The limitations of asking people to provide descriptions,

which include positive and negative effects, of doing something they choose to do are fairly obvious. The author does note this limitation, but he does not amply incorporate it into his interpretations of data and his perspectives on the study. Consider this parallel: questionnaires about racial segregation that were completed by segregationists surely would not be considered to provide accurate or objective information about the problem, although it might provide good information on how segregationists feel. Even so, if the reader keeps in mind the bias of Tart's population (marihuana-users) and the subjective nature of the information provided, the volume can be useful: the users' viewpoint should interest teachers and others. I cannot recommend the book to the relatively immature reader, because it should be read critically in regard to the points I have mentioned.

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THE STRESS OF LIFE, by Hans Selye, M.D. 1956. McGraw-Hill Book Co., New York. 324 p. \$6.95.

This is not a new book; furthermore, since 1956 much has been written on stress and the implications of the stress syndrome in man and other animals. Still, the book is well worth reading. It is the exciting autobiography of Hans Selye, a man of zest for research and enthusiasm for knowledge—the man who developed a unified view of health and disease, based on stress as the common denominator.

Selye does a superb job of supporting his ideas. He unfolds, clearly and methodically, his concept of stress and of what he calls the general adaptation syndrome, which underlies it. He divides the syndrome into three essential stages: alarm reaction, resistance, and exhaustion. By carefully and scientifically dissecting his concept he builds a strong, perhaps indisputable argument; at the same time he affords the reader the pleasures of discovery.

It is in the chapters on diseases of adaptation that Selye is most persuasive. He tells of duplicating the symptoms of avian Bright's disease in chickens through hormonal stress initiated by excessive dosages of corticoids. He documents the effects of psychologic stress on forcefully immobilized white rats by a comparison of the organs of normal (nonstressed)

rats with those of the experimental group: the stressed rats showed pathologic changes in the adrenal glands, thymus, lymph nodes, and stomach. Selye's experimentation with metacorticoic hypertension, pituitary hormones and their relationship with renal and cardiovascular disease, and the effect of shock therapy on abnormal behavior gives additional strength to his concept of stress as a common disease factor.

The last chapters deal primarily with the attitudes of Hans Selye. The reader meets a man who is dedicated to seeking greater knowledge and to developing a clearer understanding of disease, so that life may be freer of pain and so that people may be better able to cope with the continual stresses of life.

There are newer writings on the concept of stress; however, few make as clear and telling an argument as *The Stress of Life*. It is essential reading for all who are presently within or contemplating entering the scientific community.

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Biochemistry

INTRODUCTORY BIOCHEMISTRY, by M. F. Mallette, C. O. Clagett, A. T. Phillips, and R. L. McCarl. 1971. Williams & Wilkins Co., Baltimore. 811 p. \$16.75 (hardback).

This is a general treatise on biochemistry for nonmajors. The book is intended to be used in a two-semester or two-quarter course. There are chapters on the metabolism of inorganic nitrogen, on photobiology, on nutrition, and on physiology—subjects not usually covered in such textbooks. It is particularly interesting to see nutrition covered, even though the coverage is sketchy. Another attractive feature is that more space than usual is given to the theoretic aspects of the techniques of biochemistry. The book is amply illustrated, and there are many excellent references to the original literature.

I have two major criticisms of *Introductory Biochemistry*. The first of these deals with the order in which material is presented; the second deals with the excitement of the presentation of the material. I teach biochemistry from the standpoint of bioenergetics; therefore I would have put chapter 8 before the discussion of carbohydrate metabolism (chapter 6) and the citric acid cycle (chapter 7). In this book the ordering of the chapters shows that, in the coverage of carbohydrate metabolism, energetics is not emphasized as strongly as I would have preferred. Furthermore: biochemistry is (or can be) the most exciting