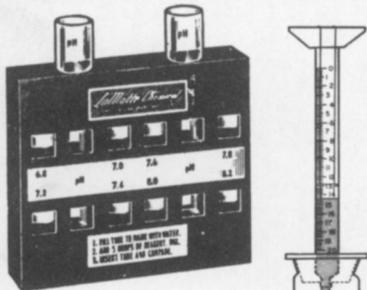


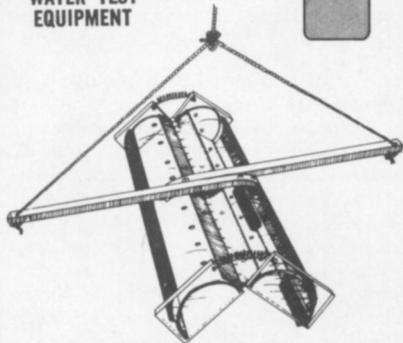
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succession of neurological correlates" (p. 111): they are two different aspects of a single event.

This book is a welcome addition to the growing number of works on philosophy of science written by biologists. The author gives a prominent place to experimental data from studies of brain function that support his philosophic postulates—a choice of emphasis that will please many biologists. However, he introduces several philosophic viewpoints that require more elaboration. For example, he attributes theory formation in the sciences to the method of retrodution, extends consciousness to many animal species, and asserts that purpose has been accepted in science in the same way in which cause has been accepted. Each of these ideas is introduced into the discussion but is not clarified to the point where this reviewer can evaluate its relationship to the author's philosophy.

Those teachers and text writers who require a real world, "out there," will find little comfort in Rosenblueth's interpretations of neural events and the highly deterministic framework within which he finds nervous systems must work.

James T. Robinson
University of Colorado
Boulder

Microbiology

BIOLOGY OF MICROORGANISMS, by Thomas D. Brock. 1970. Prentice-Hall, Inc., Englewood Cliffs, N.J. 749 pp. \$12.95.

This book is designed primarily for an introductory undergraduate course in microbiology. The general organization is excellent. The text is subdivided into five parts: structure and function; growth and its control; genetics and virology; ecology; and evolution, taxonomy, and diversity. All of the important topics normally included in an introductory course are discussed at an elementary level, but the emphasis is on fundamental principles and on organisms. The distinction between eucaryotic and procaryotic cells is a theme that permeates the text. Brock does not, however, cover the field of immunology in depth.

The text is well illustrated and easy to read. The definition of terms is precise, and the explanation of concepts is always clear. When Brock considers difficult concepts, the reader is assisted by exceptionally graphic figures succinctly illustrating them. He provides the reader with up-to-date information, thorough analysis of concepts, modern approaches to solving problems, and current philosophies in a field that is rapidly changing. Altogether, this textbook offers exceptionally wide coverage of the field of microbiology.

Frank H. Gleason
Colorado College
Colorado Springs

Zoology

PRIMARY ANATOMY, by John V. Basmajian. 6th ed., 1970. Williams & Wilkins Co., Baltimore. 420 pp. \$8.75.

Intended as a text book for students of nursing, physiotherapy, and physical education, *Primary Anatomy* relates structure to function without attempting to treat physiology. Both the text and the well-executed line drawings emphasize the relationships among the parts as they work together. Four good halftone plates from photographs show surface anatomy in light and shadow.

An introductory chapter dealing with cells, tissues, organ systems, and embryology, and a chapter on postnatal growth and development give a brief but adequate treatment of these subjects. The chapter on the articular system is outstanding. Not only are the different kinds of joints covered, but specific joints (shoulder, wrist, knee, ankle) are described and illustrated in considerable detail, showing how the movements are effected. This chapter will be very useful to students of physical education and physiotherapy. The final chapter discusses recent changes in anatomic nomenclature. It will be helpful to teachers who find that the terms they learned as students are no longer used.

John M. Hamilton
Park College
Kansas City, Mo.

FIRST AND LAST EXPERIMENTS IN MUSCLE MECHANICS, by A. V. Hill. 1970. Cambridge University Press, New York and London. 156 pp. \$9.50.

This delightful volume is an autobiographical documentary on that part of a scientific career devoted to muscle physiology by one of this century's leading scientists. Hill describes his 1924 work with H. S. Gasser on the dynamics of muscle contraction in which the investigators used isolated frog sartorius muscle to verify relationships of the speed of shortening and work done. Diagrams of the apparatus and kymograph tracings are included in the abbreviated form of the work as it appeared in the *Proceedings of the Royal Society*. Of special interest are the footnotes, which Hill uses to put the work in historical perspective. Some of the chapters that follow are about the force-velocity relationship, intrinsic speeds in fibre populations, duration of active states, elastic state, internal redistribution of length during isometric contraction, and effects of stretch on collapsing structure. These frequently refer back to the early work with Gasser and also include recent references.

The final chapter departs from the technical material of the earlier portions to the inaugural address given by Hill to the 11th International Congress of Physiologists, at Tokyo in 1965. His reminiscence of earlier congresses and