Yet the latest edition of Webster's Dictionary persists in making Joule rhyme with jowl, and the Standard Dictionary gives the preference to this pronunciation.

In time, I presume, the editors of those two dictionaries will concede that Joule knew how to pronounce his own name.

JOSEPH O. THOMPSON
AMHERST COLLEGE

SCIENTIFIC BOOKS

BIOPHYSICS

An Introduction to Biophysics. By OTTO STUHLMAN, JR. 375 pp. 155 figures. New York: John Wiley and Sons, Inc. $4.00.

THIS book on biophysics was written to serve the needs of students in biology who have had one year of college mathematics and one year of college physics. The treatment of the subjects is sufficiently clear and restricted so that a student with the above preparation should have little difficulty in reading the book. The author has exercised admirable restraint in terminating his treatment of a subject before reaching the more complex aspects and has avoided the excessively descriptive treatment characteristic of biological subjects. The treatment of subjects ranges from mere descriptions of applications of physical instruments to attempted interpretations of biological processes in terms of the principles of molecular physics.

One objective in writing such a book should be to reveal the scope of biophysical investigation. This the book does well, since the chapters include discussions of cell membranes and surfaces, of properties of nerves and the special sense organs, of the action and use of various radiations and radioactive materials, and, finally, a description of the principles and uses of the compound microscope and the electron microscope. This array of subjects, though not exhaustive, serves well to illustrate the application of physical principles, methods and instruments in the solution of biological problems.

A second objective, of great importance in a first course in any science, should be to reveal or formulate a logical structure of the subject-matter. In a textbook this can be achieved not only by choice of material but by the order of presentation of this material. From this viewpoint the book is deficient because the arrangement of chapters is dictated largely by the divisions of classical physics rather than by the systematic development of a science of biophysics. Thus the first four chapters deal with some aspect of radiation in relation to organisms. Chapter one is about x-rays, chapter two deals with radioactivity, chapter three with the properties of the eye, and chapter four discusses the emission and absorption of light by biological materials. The field of chemical or molecular physics is represented to some extent by chapter five on the properties of surfaces and membranes. Chapter six is primarily about the electrical properties of nerve; sound and auditory mechanisms are taken up in chapter seven. The last chapter is a discussion of the properties and use of the compound microscope and the electron microscope. Thus are represented most of the usual divisions of physics: radiation, molecular physics, electricity and sound.

This text structure is an unfortunate one, since it has no logical order which defines the field of biophysics as a unique scientific approach to the interpretation of living processes.

However, the order of presentation of material can be rearranged, since understanding of the content of any one chapter of the book does not depend in any important way upon that of other chapters. Therefore, this book could be used to advantage even in a course organized for the purpose of giving the student an impression of a logical science based on the principles of biology and physics. In such a course the chapters dealing primarily with physical instruments and methods could be brought in as a group representing the methodology of biophysics. The limited material directly relating to cells and organisms in chapters one, two and four could be discussed in relation to cellular mechanisms rather than physical methodology. The latter is extremely important to the subject and should never be omitted. It should not, however, define the organization of material contained in a course in biophysics.

Although it may be questioned whether this book adequately represents the scope of biophysics as a distinct science, it will be a very useful adjunct to a course in physics designed for students in pre-medical and biological fields.

FRANK BRINK

POTASH

Potash in North America. By J. W. TURRENTINE. 6×9 in. 186 pp. Illustrated. New York: Reinhold Publishing Corporation. 1943. $3.50.

ABOUT sixty years have passed since potash fertilizers in this country were first prepared from inorganic sources. During the first half of this period the entire supply was imported from Germany. The disadvantages of dependence on a foreign source for such an essential commodity was repeatedly stressed, and the demand for a domestic source of supply increased with increase in consumption of potash in fertilizers. With a view to meeting this demand, Con-