
Books

Physical Chemistry of High Polymers. By Maurice L. Huggins. 175 pp. John Wiley & Sons, Inc., New York, 1958. \$6.50. *Reviewed by Stuart A. Rice, Institute for the Study of Metals, University of Chicago.*

The physical chemistry of high polymers has made remarkable progress in the past fifteen years, and Dr. Huggins has been in the forefront in this development. The book being reviewed is, to some extent, a record of those aspects of the field to which the author has contributed most. As is then to be expected, the sections on solution thermodynamics and molecular structure (x-ray) are best. Other topics dealt with are synthesis and configuration of chain molecules, plastic and viscous flow, and elasticity.

It is difficult to decide for whom this book was intended. It certainly cannot serve as a graduate text nor an introductory text for chemists or physicists interested in pursuing the subject since it is too narrow in scope and superficial in treatment. In the opinion of this reviewer it will best serve as a general book for the intelligent layman or scientist in a completely different field desiring a general description without much detail. The reviewer hopes that this book will help to correct an unfortunate oversight by which Dr. Huggins is denied credit due him for his very early suggestion of helical structures in proteins (1943).

Mind and Matter. By Erwin Schrödinger. 104 pp. Cambridge U. Press, New York, 1958. \$2.75. *Reviewed by J. C. Polkinghorne, Trinity College, Cambridge, England.*

The Tarner Lectures at Trinity College, Cambridge, are delivered every three years on "the philosophy of the sciences and the relations or want of relations between the different departments of knowledge". In 1956 the lecturer was Professor Schrödinger and he discussed the strange intellectual world of science, built on the pattern of our sensual perceptions yet ultimately excluding these perceptions from its picture. The first thing that we know about a sodium flame is that it is yellow, yet when we know all about atomic spectra what has happened to this yellowness? The baby has been thrown out with the bath water. The knowledge of the intellect and the knowledge of the senses form a paradox of relation and want of relation.

Though the picture that we form of the world depends on our private perceptions we do agree about what it seems to be like. Schrödinger can only explain

this by supposing that in fact we are not many separate selves but only one Self—a point of view more congenial to the Eastern mind than to the Western. He finds satisfaction that the Upanishads and the experiences of some mystics agree with this. Yet many others, Isaiah for example, have had equally profound experiences of Otherness and there are as many religions of Transcendence as of Immanence. No doubt to explain the unanimity of our experience by supposing a "real world" behind it raises philosophical difficulties but it is surely clear that no simple solution can be found of this problem that has perplexed wise men for centuries. While one sees that Johnson did not logically refute Berkeley by vigorously kicking the table, yet one feels that the advantage was with the Doctor.

Having declared myself to be a naïve plain man I must also confess that I got much pleasure and stimulation from reading these lectures. Schrödinger has many interesting things to say; for example in his opening chapter where he wishes to have consciousness always present in the universe so that its development is never a drama played to empty stalls—and since he apparently finds the idea of God too hard or too easy a solution of this problem—he argues that consciousness is always present where there is learning and adaptation. At times his style is less easy than usual and he seems too anxious to give us the German for it, but there are also many of the felicities of style and exposition that we have come to expect from him.

Introductory Physics: An Historical Approach. By Herbert Priestley. 515 pp. Allyn & Bacon, Inc., Boston, Mass., 1958. \$7.50. *Reviewed by Richard T. Weidner, Rutgers University.*

This general elementary textbook is intended primarily for the nonscience student taking a terminal course in physics in which the historical and cultural aspects are emphasized. (Of course, no student specializing in physics need ever study in a formal way any of the nontechnical aspects of physics.)

All of the usual topics are here, arranged in their typical sequence from units and vectors to atomic and nuclear physics. But there is a difference. In introducing each new topic, the author gives a concise, lively, and yet discerning résumé of its historical origins, often with judicious quotations from original research writings and detailed references to available sources for further reading. Certainly no student using this text can evade learning that the development of physics was often tortuous, that theory and experiment are complementary, that physics is open-ended. In addition, the reader is rewarded with fascinating anecdotal tidbits, e.g., lenses are so named because they look like lentil beans, Oersted's report on the effect named for him was probably the last scientific discovery to be written in Latin. Professor Priestley has, moreover, mercifully saved the reader from those profound depths of insight into the historical foundations of physics that are to be