and the difficulties in diagnosis. The statement that "except in emergencies the possibility of amebic etiology of appendicitis should be carefully explored before surgery is decided upon" is to be questioned in caring for most patients with acute abdominal pain.

However, in general, this book provides a great deal of information and an excellent bibliography on the complicated subject of amebiasis. Both the family physician and the specialist will find it a valuable addition to their library.

K. R. CRISPELL

Department of Internal Medicine,
University of Virginia School of Medicine

The Present State of Physics. A symposium presented 30 Dec. 1949 at New York meeting of AAAS. Arranged by Frederick S. Brackett. AAAS, Washington, D.C., 1954. vi + 265 pp. Illus. $6.75. (Members, $5.75).

The papers here presented give excellent introductions to various fields of research in physics and biophysics on the level of a college graduate.

P. Kusch gives a lucid discussion of the magnetic moment of the electron. He describes the atomic beam method for observation of the hyperfine structure of atomic lines and briefly discusses the correlation of the experimental results with the various steps of the theory, culminating in Schwinger's treatment of the interaction between the electron and the quantized radiation field.

Two papers are devoted to cosmic rays. E. P. Ney discusses the particles and processes that are observed in cloud chambers and emulsions at balloon altitude, that is, around 90,000 ft, where the primary cosmic rays are predominant, and where some heavy primaries are present with abundances at least as great as their abundances in terrestrial or stellar matter. J. C. Street surveys the processes by which the primaries, which (in rare cases) may have energies up to 10^{17} ev, gradually change to the cosmic radiation as observed at sea level. In particular, he discusses the production of π mesons and their decay to μ mesons. The two papers on cosmic rays reproduce numerous very instructive cloud chamber photographs.

An article by K. Lark-Horovitz on "the new electronics" gives a historical outline of semiconductor problems and a special discussion of the electric and optical properties of germanium semiconductors in bulk form as they are affected by chemical impurities and lattice defects. The thoroughness of this article is evident from the fact that it occupies a quarter of the book and gives 352 references.

The next article, by J. Bardeen, is concerned with the transistor. Starting from a brief review of the properties of semiconductors, he presents some of the basic equations governing the flow in semiconductors and applies them to the interpretation of the transistor.

A von Hippel interprets the ferroelectric properties of barium titanate, which, better than any other ferroelectric substance, lends itself to fundamental investigations and applications. Its transparency permits the striking optical demonstration of the "domains" and their changes in an alternating electric field.

P. J. W. Debye investigates the structure of polymers, combining the various experimental methods: scattering of light, index of refraction, depolarization of the scattered light, turbidity, dielectric constant, and viscosity.

The article of R. Lumry and H. Eyring takes us into the field of biophysics. Its title is "Implications of the chemical kinetics of some biological systems." The authors explore to what extent the laws of thermodynamics and chemical kinetics lead to the understanding of certain biological processes.

I feel that the field of biophysics would gain from more active cooperation by physicists. However, physicists are not attracted to biophysics, since here the problems are presented by the biologist, and the collaborating physicist may frequently consider himself a technical assistant. The last two articles will help overcome the reluctance of the physicist by presenting biophysical problems from the biologist's point of view. These articles are by Frank Brink, Jr., "Some physical and chemical properties of axons related to conduction of nerve impulses," and by Frank H. Johnson, "Bioluminescence and the theory of reaction rate control in living systems."

The papers were presented at a symposium 30 Dec. 1949. Only a few papers give any more recent references. In a period of rapid progress, many readers who want to familiarize themselves with the present state of research may try to find more recent sources than this symposium, excellent as the papers are.

O. OLDENBERG

Lyman Laboratory of Physics,
Harvard University

Problems of Consciousness. Transactions of the Fourth Conference, 29–31 Mar. 1953. Harold A. Abramson, Ed. Josiah Macy, Jr. Foundation, New York, 1954. 177 pp. Illus. $3.25.

The interdisciplinary conference on problems of consciousness, sponsored by the Macy Foundation, has now completed its fifth and final annual meeting. Each year a panel of distinguished scientists, mostly from the medical and social sciences, spend 3 days in a leisurely examination of some of the problems of the field. At each meeting there are a few formal presentations, but most of the time is reserved for free discussion, all of which is recorded for subsequent publication.

A serious assessment of the value of the conference should await the appearance of the fifth volume, presumably now in preparation. The fourth report leaves one with some doubts as to the appropriateness of this topic for an interdisciplinary conference, particularly when the membership is notably lacking in people with technical philosophical training. "Consciousness"