School Science; Vol. II, Universities; Vol. III, Technical Colleges (Part 1. Veterinary Sciences, Part 2. Physics and Chemical Engineering, Part 3. Agriculture Sciences, Part 4. Electrical Engineering, Part 5. Medical Sciences). All books are available in English, French, or Spanish editions. There is also a Chinese edition of Vol. I.

The series is intended to facilitate the restoration of war-damaged school laboratories and museums and to serve as a guide for equipping newly-established science teaching units, particularly in the less well developed countries.

The present volume on electrical engineering, like the others, presents suggestions for specific demonstration and laboratory equipment based on sample curricula as actually practiced in representative schools. For example, in this volume will be found complete outlines of the electrical curricula at the École Supérieure d'Électricité (France), and at the Kunglika Tekniska Högskolan (Sweden). Instruction at The University of London and other English institutions is discussed, but without specific curricula or inventories. Detailed lists of apparatus pieces together with their current price equivalents in dollars are given. Even raw stock materials are included.

The appendixes contain a list of abbreviations and symbols, a table of conversion factors and a short list of apparatus supply houses located in various countries.

These books should be of considerable value to anyone faced with the task of establishing or restoring science laboratories. The greater part of the onerous work of gathering the information and arranging it for presentation was done by M. Alain Gille of the staff of the Department of Natural Sciences of Unesco. He is to be congratulated on having produced an extremely useful and unique addition to the literature of science teaching.

Structure of Molecules and Internal Rotation. By San-ichiro Mizushima. 244 pp. Academic Press Inc., New York, 1954. $6.00. *Reviewed by I. Amdur, Massachusetts Institute of Technology.*

Professor Mizushima has performed an excellent service by collecting into a single monograph a detailed discussion of the structure of molecules showing internal rotation. Since he and his co-workers have been actively engaged in research in this field for twenty years, it is not surprising that the book contains many references to their own work, and that it advocates structures which reflect their findings. In a field where controversy is the order of the day, the summary, in a single volume, of the considered conclusions of a group of investigators who have devoted most of their research efforts to internal rotation, is extremely helpful to the reader who is trying to arrive at his own conclusions.

The book is divided into two parts. Part I contains six chapters, the first three of which discuss internal rotation in ethane and its halogen derivatives. The author

shows how a variety of measurements, infrared spectra, Raman spectra, dielectric constant, x-ray diffraction, electron diffraction, and specific heat, may be used to obtain information concerning internal rotation and, thereby, molecular configuration. Particular attention is given to the determination of the difference in energy of rotational isomers and to the character and magnitude of the potential barrier to internal rotation. The second three chapters of Part I discuss internal rotation in other molecules having C—C axes, in cyclic compounds, and in compounds having C—O, O—O, S—S, and Si—Si bonds as axes of rotation; internal rotation in long chain, paraffinic molecules; and the application of the methods already discussed to complicated molecules of biological interest—polypeptides and related compounds. Each of the six chapters of Part I contains a concise, excellent summary.

Part II of the monograph may be best described as an experimental and mathematical appendix. It contains two chapters, of which the first is a summary of the applicable experimental methods of infrared and Raman spectroscopy, of dielectric constant measurements, and electron diffraction. The second chapter is a detailed introduction to normal coordinate analysis, and treats specifically the normal vibrations of the 1,2-dihalogenoethanes and of normal paraffins.

The book is written in a clear, straightforward manner and is well organized. It should be of interest to those physicists and chemists who are personally active in research in the broad field of molecular structure as well as those who would like an authoritative introduction to problems of internal rotation.

Atomic and Nuclear Physics. By Robert S. Shankland. 529 pp. The Macmillan Co., New York, 1955. $7.75. *Reviewed by S. F. Singer, University of Maryland.*

The refreshing thing about this book is that it deals with so many topics that form the subject of current research.

The volume covers a very large range of topics in the fields of atomic and nuclear physics. It starts with a discussion of the atomic concept in kinetic theory, the electron and its picture in quantum theory; electron spin and exclusion principle then leads into a discussion of atomic structure and spectra. This is treated very lightly, the main emphasis being on hydrogen, helium, and alkali spectra. Molecular structure and spectra are discussed next, followed by a chapter on x-rays which also includes an account of positronium and electron-photon cascades. Then follows a chapter on the solid state of matter which deals with most of the important topics currently of interest to physicists, including a brief mention of the important phenomena of semiconductors and applications. Next comes a discussion of isotopes and nuclear structure with a mention of the shell model and nuclear models in general; nuclear spins and magnetic moments are described in more detail in-