diate neighborhood, as listed in the classical Shapley-Ames *Catalogue* of 1932. One chapter, reprinted from an article published by Shapley in the *American Scientist* in 1956, reviews rather briefly the Harvard studies of the Clouds of Magellan.

Two chapters dealing with the diameters of the Galaxy and the distance to its center are, perhaps, not very relevant to the subject matter but are of more general interest and in line with the purpose of the book: to present a well-rounded account of all Shapley's main "galactic and extragalactic" studies. The final chapter deals with miscellaneous subjects related to the orientation and evolution of galaxies and tests for possible intergalactic absorption.

The line illustrations are adequate, but the plates are disappointing. This, however, is a rather minor defect, since this is not a "picture book." All students of the extragalactic field will be grateful to Shapley for this very valuable compendium of three decades of "trail blazing work," carried out under his direction at the Harvard Observatory.

G. DE VAUCOULEURS
Lowell Observatory, Flagstaff, Arizona

Russian-English Glossary of Nuclear Physics and Engineering. Russian-English Glossary of Solid State Physics. Russian-English Glossary of Electronics and Physics. Consultants Bureau, New York, 1957–58. 195 pp.; 90 pp.; 343 pp. $10 each (series rate available).

These volumes represent a first step in the development of a complete Russian physics dictionary. A number of other specialized glossaries are still to be issued; ultimate publication of a single revised dictionary is envisaged. The present issues, then, are to be judged in the light of their rather transient character.

Within their defined scope, the glossaries appear to be first class. The compilers have avoided the common mistake of presuming that there is a one-to-one correspondence between Russian terms and English equivalents; often two, and occasionally three or more English terms are listed. The translations are realistic, and current terminology is used effectively.

Nevertheless, I was somewhat shaken by the enormous number of terms. These three volumes furnish more than 30,000; the completed text will probably have 100,000. That would make a rather large book to thumb through. Is such a large number necessary? My opinion is negative on this point. For example, *edinitsa* means "unit," and is so listed. It then is followed by ten other phrases (such as length unit, mass unit, energy unit) each one of which is a literal translation of a pair of Russian words (*edinitsa dliny, edinitsa massy, edinitsa energii*, and so on). This practice adds nothing but length to the volume. One should take it as a fundamental rule that no phrase should be inserted in the glossary whose precise meaning can be found by a literal translation of its individual members.

One of the outstanding features of the *Electronics* glossary is a listing of American equivalents of Soviet vacuum-tube designations. This inclusion and that of a series of Russian abbreviations are exceedingly valuable features.

ROBERT T. BEYER
Physics Department, Brown University

Radiological Physics. M. E. J. Young. Academic Press, New York, 1957. x + 365 pp. Illus. $7.50.

This book is intended for the use of candidates for diplomas in radiology from the Royal College of Physicians of London or the Royal College of Surgeons of England or of candidates for membership in the Society of Radiographers. The text is thus designed around the requirements for these examinations, but it should, nevertheless, be of value to the many workers who want a ready reference or who wish to review the status of medical physics.

The text is a well-written basic review of the field. Mathematical treatments of the subject matter are avoided for the most part. A useful feature is the group of examination questions at the end of each chapter.

Two introductory chapters review the fundamentals of nuclear physics, thermionic emission, vacuum tubes, and electronic circuits. The production of x-rays is reviewed in two chapters, which separate the subject into the energy region above and that below 400 kev. Chapters on the naturally occurring radioactive substances and the interaction of radiations then set the stage for subsequent chapters on diagnostic radiography, the chemical and biological effects of ionizing radiations, the therapeutic use of gamma radiations, and the production and medical use of artificial isotopes. The text concludes with a chapter on health hazards and radiological protection.

The volume should be well received by those who wish a nonmathematical introduction to the subject of radiological physics.

MERRIL EISENBUD
U.S. Atomic Energy Commission, New York

Social Sciences

Pleistocene Man at San Diego. George F. Carter. Johns Hopkins Press, Baltimore, Md., 1957. xvi + 400 pp. Illus. $8.

The dogmas that "early man" in the Americas dates back 10,000 to 15,000 years and that the American culture is an isolated tradition have been giving ground. The thesis of this provocative book is that man has lived in the San Diego region of California for some 30,000 years and perhaps 80,000 years and that he witnessed the changes in climate and sea-level of the Wisconsin glaciation. Evidence is developed from studies of geologic, geomorphic, and climatic phenomena and from 17 archeologic site areas, which are then placed within the suggested geochronologic framework.

Among the basic concepts considered are the eustatic theory of sea-level changes; stability of the area, particularly during the Upper Pleistocene; a time-sequence of soils and soil profiles; and correlation of the 25-foot subaerial terrace with the last interglacial of the Wisconsin, on the theory that there has been no sea stand higher since that time. The thesis is supported by data from other areas of California, from other parts of North America, and from other countries, and there is a variety of evidence.

The archeologic sequence is developed on the basis of early work of M. J. Rogers, one of the first systematic investigators in the area. Carter has reinterpreted the archeology on the basis of recent field work and of his knowledge of the region and adjacent areas; he has defined an older tradition and has greatly expanded the time scale of the occupation. Many details are presented, but archeologists generally will not be satisfied with the methodology. Detailed site reports and further analysis of the implements are still needed—a situation of which Carter is fully aware. It is regrettable that reports and artifacts from previous work were not accessible, so that details and comparative data on earlier finds could have been presented.

Stone-working techniques, as indicated by the artifacts and tool-manufacturing debris from the older horizons, are considered, and the need for more research is noted. Many archeologists have reserved judgment or have questioned the view that the workmanship is that of man, but the presence of associated hearths, charcoal, fire-broken rock, burned bone, and marine shells supports the view that the presence of the material in the valley fill and elsewhere is more than fortuitous.

The book is well illustrated with photographs, maps, charts, diagrams, and