

The treatise is intended to serve as an introduction in the field of cosmic rays for those who have not had intensive background in physics and mathematics.

The second part of the book was written by Jakob Eugster. It contains a detailed description of experiments carried out by the author chiefly in the mountains of Austria and Switzerland. The aim is to assay the possible biological effects of cosmic radiation. These experiments were begun in the year 1931. Their description purports to show that cosmic radiation, particularly cosmic ray showers, has a demonstrable deleterious effect on a wide range of organisms including bacteria, plants, drosophila flies, mice, and cancer tumors. Because of the very low intensity of cosmic ray radiation, the experiments were difficult to perform. The observations had to be extended for a long period of time and were hard to interpret. One should admire and encourage the apparent unceasing efforts of the Swiss workers to attempt such experiments. Yet in spite of the meticulous and detailed effort on the part of the author to describe experimental details, one obtains a hesitancy and a certain amount of disappointment in reading this part of the book, chiefly for two reasons. First, extrapolating from practically all of the observations available on biological effects of artificial sources of radiation, the biological effect of cosmic rays at sea level should be almost negligibly small. Secondly, it has been pointed out by Delbruck, Timofeeff-Ressovsky, and others that the intensity of cosmic rays is so small that even theoretically the biological effects of cosmic rays are negligible in importance compared to the biological effects of other environmental agents to which organisms are exposed (e.g. temperature fluctuations, light, etc.).

In view of the above reasons, if cosmic rays have a significantly large biological effect one would expect such an effect to be due to a new, but as yet not well known, component of cosmic rays, or to a type of biological response to radiation that has not previously been proven. This explains the possible importance of experiments of this type. The authors claim to have observed some significant biological effects. In view of the great variability of biological material and of their sensitivity to minute environmental changes, the reader should accept and interpret such results with reserve and caution.

Cornelius A. Tobias
University of California

Briefly Noted

Particle and Quantum Detectors. By R. R. Wilson, D. R. Corson, and C. P. Baker. National Research Council, Washington 25, D. C. 1950.

Number 7 in the NRC Nuclear Science Series, this report contains sections on ionization, proportional, Geiger, and scintillation counters, and electron multipliers. Pulse shape, pulse time, electronic amplification, and similar characteristics and techniques are discussed for each type of detector. It is available without charge to active workers in the nuclear science field, and is one of a series being compiled by the Committee on Nuclear Science of the NRC's Division of Mathematical and Physical Sciences. It is planned to publish the complete work later as a handbook of nuclear instruments and techniques.

Prevention of Deterioration Abstracts. National Research Council, Washington 25, D. C. Yearly subscription, \$50.00.

Approximately 2000 loose-leaf pages of abstracts of pre-

vention of deterioration papers are published annually in monthly issues under the headings biological agents, electrical and electronic equipment, fungicides and other toxic compounds, lacquers, paints, and varnishes, leather, lubricants, metals, miscellaneous, optical instruments and photographic equipment, packaging and storage, plastics, resins, rubbers, and waves, textiles and cordage, and wood and paper. The subscription rate includes yearly subject and author indexes compiled from July through June, two sturdy binders, and index tabs. An advance list, a monthly bibliography of all reports received in this field, is available for \$10.00 a year.

Subject Index to Volume 12 of Bibliography of Technical Reports. Office of Technical Services, Department of Commerce, Washington 25, D. C., 1950. \$1.00.

Copies of the recently available Index to *Volume 12*, which gives the location of reports on any subject carried by the Bibliography in the period July-December 1949, are obtainable from the Office of Technical Services. Checks should be made payable to the Treasurer of the United States.

Thermistors as Tools in Research and Development. PB 100 655. 32 pp. \$2.25 in microfilm, \$5.00 in photostat.
Practical Limits of Speed Speech. PB 110 071. 24 pp. \$2.00 in microfilm, \$3.75 in photostat.

New Design of Metal to Ceramic Seals Compared with Former Designs. PB 100 731. 24 pp. \$2.00 in microfilm, \$3.75 in photostat.

The above three publications have been released to the public by the Air Force through the Office of Technical Services, U. S. Department of Commerce, and can be purchased from the Library of Congress Photoduplication Service, Washington 25, D. C. Checks or money orders should be payable to the Librarian of Congress.

A Functional Description of the EDVAC. 400 pp. Office of Technical Services, U. S. Department of Commerce, Washington 25, D. C., 1950. \$9.00.

EDVAC, the electronic digital computer developed by the University of Pennsylvania for the Army Ordnance Department, is the subject of a report made available to the public by the Office of Technical Services of the Department of Commerce. General principles covered in the report include descriptions of the dispatcher, EDVAC control, computer, memory, reader-recorder, timer, power supply, and switchgear. It appears in two volumes plus an Errata Section. Orders should be addressed to the Moore School of Electrical Engineering, the University of Pennsylvania, Philadelphia 4, Pa., and not to O.T.S.

Liquid Metals Handbook. Editor-in-Chief, R. N. Lyon. 194 pp. Sponsored by Atomic Energy Commission, Office of Naval Research, and Navy Bureau of Ships. U. S. Government Printing Office, Washington, D. C., 1950. \$1.25.

This book is a compilation of information on metals having sufficiently low melting points to become liquid within a few hundred degrees of room temperature. Although the *Handbook* will be of interest chiefly to reactor designers, the AEC has expressed the hope that its publication will encourage the use of liquid metals in other industrial applications and thereby increase the number of personnel trained to work in this relatively new field of technology.