

BOOK REVIEW

Selection of books for review is based on the editors' opinions regarding possible reader interest and on the availability of the book to the editors. Occasional selections may include books on topics somewhat peripheral to the subject matter ordinarily considered acceptable.



TARGETS, HITS, AND MISSES

Title Biophysical Aspects of Radiation Quality

Publisher International Atomic Energy Agency, 1966

Pages 215

Price \$4.50

Reviewer Ernest C. Pollard

This is one of a series of technical reports by the International Atomic Energy Agency and is concerned with the report of a panel on the Biophysical Aspects of Radiation Quality. The report takes the form

of the papers given by the panel members and some invited consultants. The discussions following the papers are not presented in the book and would have been of great value if they had been; nevertheless, the papers themselves represent a statement of a position which is quite interesting.

Anyone looking at the papers will naturally select those of interest in his particular area. From the point of view of this reviewer, the two most interesting papers were by Barendsen on the relative effectiveness of ionizing radiations on mammalian cells, and the paper by Neary on radiation quality effects for

chromosome aberrations. The first of these is really full of information and tables and represents a very solid paper in which a conclusion is reached which suggests that about 10 to 15 ionizations are required to occur within a volume of the dimensions of the order of 100 Å, and also that only 25% of the damage at the primary chemical level is oxygen-dependent. Both conclusions are of great interest and suggestive of future work. The paper by Neary represents more of a discussion than a paper, but it, too, closes in sharply on the problem of chromosome damage, with conclusions essentially opposite to Barendsen, though not necessarily in conflict with them because of a difference in the assumed model for a chromosome. The discussion of this whole area by Neary is of great interest.

The whole publication is perhaps too much related to statistical analysis and the feeling that hits and targets are significant. It is quite likely that a good many radiation studies *can* be analyzed in terms of hits and targets, but that feature of radiation action which is sequential, and in which developments follow *after* the hit is not discussed very much in this series of articles. To the reviewer's mind, this is a defect.

The volume is small, interesting, and certainly one that any radiation student would like to have on his shelves.

Ernest C. Pollard is Head of the Department of Biophysics at The Pennsylvania State University. After receiving his PhD (physics) from Cambridge University in 1932, he joined the faculty at Yale in 1933. He remained at Yale, becoming Chairman of the Department of Biophysics, until he joined the faculty at The Pennsylvania State University in 1960. A staff member of the MIT Radiation Lab during World War II, he has been active in nuclear physics and biophysics with interests ranging from radar to viruses.

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