

REVIEWS

RADIATION PROTECTION AND RECOVERY. Edited by Alexander Hollaender. Pergamon Press, London. 1960. Pp. 392, with 56 figures. 70s.

As Hollaender points out in the introduction, "this volume contains discussions of the biological, physiological, and biochemical methods that have been developed for protecting living organisms against radiation damage". Of special interest to geneticists are the chapters on the protection and recovery of the cell by Whiting, on the modification of chromosome aberrations by Wolff, the protection and recovery mechanisms in seeds by Davidson and genetical protection against ionising radiation by Conger.

Of more general interest, but with genetic implications, are the chapters on protection and recovery in bacteria and fungi by Stapleton, protection of whole-body radiation injury with bone marrow therapy by Smith and Congdon, delayed somatic effects by Odell, Cosgrove and Upton, the effect of radiation on antibody formation by Makinodan and Gengozian, and photoreactivation by Jagger.

Factors which may modify damage induced by ionising radiation include the stage of nuclear development, mechanical disturbance, radiation intensity, ion density, water content of the cells, temperature, oxygen tension and chemical agents. These agents may act by modifying the initial chromosome breaks, or, more often, by hastening or delaying the restitution of the induced breaks in the chromosomes. Most of the chemical protective agents appear to function by reducing oxygen tension.

Protective agents which function at the cell or nuclear level also function at the organism level, as would be expected on a genetic basis. Similar reactions to the various protective agents are found in all organisms from bacteria to mammals. These similarities also extended to the macromolecular level *in vitro*, as shown by Alexander in the opening chapter.

The rapid extension of the field of radiation biology makes it very difficult to keep up with the publications in more than a limited area of research. These review monographs serve a very useful purpose in reviewing the literature and providing a general summary of work in allied fields. The authors of this monograph have done an excellent job.

KARL SAX.

ERBLICHE SCHÄDEN DURCH IONISIERENDE STRAHLEN. By Richard Focke. VEB Georg Thieme, Leipzig. 1959. Pp. 78. DM 10.45.

In the Atomic Age it is essential that everyone should understand the genetic hazards of ionising radiation. Even if we abolish atomic weapons the industrial use of atomic energy also presents problems. The author has dealt with these hazards in a concise and simple manner. The various types of ionising radiations and their biological effects are described. The various factors which may modify radiation sensitivity are listed briefly under physiological, environmental and genetic variation, but one of the most important factors, chromosome size, is not included.

Major attention is given to the induction and transmission of deleterious mutations induced in man by ionising radiation. Included are the types of