tems (the Ahuachapán, El Salvador, and Takinoue, Japan, regions), and the geothermal system of the Jemez Mountains in New Mexico. It is disappointing that such areas as the Geysers, Lardarello (Italy), or one of the New Zealand fields could not have been included. One does not really see from these case histories how the principles developed in the first section can be applied.

In general, the book is well written and the subject is clearly presented. The material is somewhat out of date, but this is probably due to publishing delays. I would recommend the book as a good overview of the behavior and varied nature of geothermal systems.

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Mutation Processes

DNA Repair and Mutagenesis in Eukaryotes. Proceedings of a symposium, Atlanta, June 1979. W. M. GENEROSO, M. D. SHELBY, and F. J. DE SERRES, Eds. Plenum, New York, 1980. xii, 458 pp., illus. $49.50. Basic Life Sciences, vol. 15.

This volume of symposium proceedings attempts to bring to bear on eukaryotes an understanding of the molecular basis of mutagenesis such as has been developed in studies of prokaryotes.

After three review papers, beginning with a summary by Kimball of the concepts of mutagenesis in bacteria, that are intended to set the scene, there are five groups of papers, each ending with a short "summary and perspective" paper.

The fungi are represented by *Neurospora crassa* (three papers) and *Saccharomyces cerevisiae* (four papers). The profitable idea of using the "mutagen-sensitive repair-deficient mutant" as a research tool has been applied extensively in these two lower eukaryotes, in particular the yeast. The paper by Lemontt is an especially useful summary of the impressive progress already made. To date some 70 mutagen-sensitive loci have been identified in yeast.

A phylogenetic quantum jump is then made to *Drosophila* (four papers). The emphasis is again on the use of repair-deficient mutants. In the case of *Drosophila*, however, ultraviolet-sensitive mutants have yet to be isolated, though mutants defective in excision repair of pyrimidine dimers induced by ultraviolet can be found in both bacteria and humans. Culture of somatic cells is now feasible with *Drosophila* and, coupled with the extensive knowledge of the cytogenetics of this organism, should make it possible to achieve a precise analysis of the genetics and biochemistry of mutation.

The most extensive section of the book is devoted to studies of mammalian somatic cells (eight papers) and deals with such diverse matters as chromosome aberrations, the biochemistry of DNA repair, and somatic cell mutations. Again the main message is the utility of repair-deficient mutants.

A penultimate section deals with studies of mouse germ cells (three papers). The importance of repair processes is stressed again, but of course no repair-deficient mouse stocks are available.

Although it is suggested on the dust cover that the volume contains an evaluation of the risk to human health posed by various physical and chemical agents, this is not to be found in it. Apart from the summary and perspective paper the final section, which is concerned with this subject, contains only one paper, by German. In the summary and perspective paper Langley refers to contributions by Paterson and by Swift that are not included. I can only assume that both authors felt that yet another rewrite of their albeit very interesting work was uncalled for.

This point draws attention to a question that confronts contributors to a symposium, particularly when they are working with material or systems where progress is slow—how often does a particular study merit reporting? In this book, to choose examples from the areas with which I am most familiar, the paper by German has inevitable similarities to a paper he presented at the sixth International Congress of Radiation Research in May 1979, and Sasaki and Trosko use data from their earlier papers.

Nevertheless, though I see nothing new in the papers where familiarity breeds contempt, the material is well presented and some, at least, of the discussion (notably that by Bender) controversial. In those areas where I have less experience the papers appear more interesting. If I apply the criteria of excellence that fit the former papers to the latter then I am bound to commend this volume as a useful and worthwhile summary to help those mere mortals who cannot know everything.

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